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Santa Barbara

New Water in New India: How Does IT Sector Philanthropy Re-Cast Water and Citizenship?

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Anthropology

by

Lindsay Nicole Vogt

Committee in charge:

Professor Mary Hancock, Co-Chair

Professor Casey Walsh, Co-Chair

Professor Lisa Parks

December 2019

The dissertation of Lindsay Nicole Vogt is approved.

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Lisa Parks

_____

Mary Hancock, Committee Co-Chair

_____

Casey Walsh, Committee Co-Chair

December 2019

New Water in New India: How Does IT Sector Philanthropy Re-Cast Water and Citizenship?

by

Lindsay Nicole Vogt

Acknowledgements

Very early in graduate school, I once likened students who took many years to finish their dissertations to bathroom bugs who hide out of sight, stagnate, and grow fat in the recesses of forgotten and unseen spaces. Little did I know that I too would become, in the perspective of that younger self, quite a big bathroom bug.

These days my terms for understanding this long journey are quite different. A decade and some has passed, and thinking about the transformation that has transpired in that time is dizzying. For the most part, I did not undergo so literal a Kafkaesque metamorphosis, nor did I spend a decade in the cracks of a dank and murky abyss (even if it felt that way sometimes). Rather, the years were filled with much to learn, such as language (Hindi), the many literatures and social theory relevant to this project and its earlier conceptions, how to design a formidable research project, how to then execute it amidst the ever-moving situations and dynamics of life (i.e. "the field"), how to write, how to revise, how to teach, and the self-discipline required by it all. And while the completion of this dissertation marks a degree of achievement and mastery, all of these learning pursuits are still quite underway. True mastery of the many skills required of a sociocultural anthropologist takes, it seems to me, upwards of a lifetime.

Many people have helped me along this journey and in the rather enormous task of bringing this research to its final form as a doctoral dissertation. It is only fitting that I recognize them here.

Foremost, I would like to thank my primary academic advisors, Casey Walsh and Mary Hancock, for thinking and reading through this project in its many iterations, from its initial proposals to its most recent chapters. Though any mistakes in this manuscript are fully my own, this project – and my graduate training – would have suffered greatly if it were not for the careful and varied feedback of these two advisors over the years. Both advisors have been unwavering in their duties. I would like to thank Casey also for his unrelenting encouragement and positivity, his guidance through the fascinating horizon of the anthropology/ies of water, and for the many fruits from his monastic study of Marxist thought which I continue to treasure and learn from. In the process of completing this dissertation, I have very much appreciated the stealth with which Casey provided suggestions and unveiled the next administrative steps and requirements. Furthermore, I must thank Casey for so steadily and generously giving his support and wisdom on the many matters of academic and administrative minutiae – details which no one tells you but which you are expected to perform flawlessly – that I so frequently ask about. I look forward to discussing water and many things aquatic in the coming years. I am also extremely grateful for the mentorship of Mary Hancock from my first days in the UC Santa Barbara graduate program until now. Throughout she leant her time and brilliance with exceeding generosity, and she did so in many ways: as a meticulous and deep reader, as a scrutinous scholar with uncanny fluency of many folds (and many eras!) of social theory and South Asian Studies, as a creative pedagogist, and as a truly dedicated instructor. I am thankful to Mary also for her willingness to meet my thoughts and writing wherever they were – whether way out in some metaphorical left field or sitting much too close (or much too simplistic) for comfort – and for always trying to guide my writing, teaching, and thinking on the basis of my particular strengths and interests. Despite her many commitments – and the sincerity and seriousness

Lindsay Nicole Vogt
Curriculum Vitae
December 2019

EDUCATION

Ph.D. Anthropology, University of California, Santa Barbara, 2019
Dissertation: *New Water in New India: How Does IT Sector Philanthropy Re-Cast Water and Citizenship?*
Committee: Casey Walsh (co-chair), Mary Hancock (co-chair), Lisa Parks

M.A. Anthropology, University of California, Santa Barbara, 2010

B.A. Anthropology & English with honors, The Ohio State University, 2005

PUBLICATIONS

Book Chapters
2016 Hahn, Tomie, Louise Campbell, **Lindsay Vogt**, Simon Rose, George Blake, Catherine Lee, Sherrie Tucker, Francois Mouillot, Jovana Milovic, Pete Williams. "Banding Encounters embodied practices in improvisation" in *Negotiated Moments: Improvisation, Sound, and Subjectivity*. Ellen Waterman & Gillian Siddall, eds. Durham: Duke University Press.

Web-Based Publications
2016 Vogt, Lindsay & Jessica Bray. "The Future is There Looking Back at Us." *PoLAR: Political and Legal Anthropology Review Online*, https://polarjournal.org/2016 virtual-edition-introduction/

2011 Vogt, Lindsay. "The Virtual Reality: Exploring Graduate Student Use Patterns of the UCSB Library." Ethnographic Report. (Please request paper if interested)

Manuscripts in Preparation
n.d. Vogt, Lindsay. "Corporate but Not: The donor non-profit as vocational refuge and shade spot in capitalism"

n.d. Vogt, Lindsay. "When Tech Runs High but the Water Runs Out: Corporate power, hegemonic visuality, and the paradoxes of capitalism in Bangalore."

GRANTS & FELLOWSHIPS

2016 Association for Political and Legal Anthropology and *PoLAR: Political and Legal Anthropology Review*, Digital Editorial Fellowship
2015 Interdisciplinary Humanities Center, UC Santa Barbara, Pre-Doctoral Fellowship

2015	University of California Santa Barbara Graduate Division Stipend Award
2014	Walter H. Capps Center for the Study of Ethics, Religion, and Public Life – Steve and Barbara Mendell Graduate Fellowship in Cultural Literacy
2014	UC, Santa Barbara Graduate Division – Humanities and Social Sciences Research Fellowship
2014	University of California Santa Barbara Department of Anthropology Sociocultural Graduate Student Research Grant
2014	American Institute of Indian Studies – Summer Foreign Language Fellowship
2013	University of California, Santa Barbara Department of Anthropology Summer Award
2012	Interdisciplinary Humanities Center, UC Santa Barbara, Research Focus Group Grant with Co-PIs Professor Mary Hancock (Anthropology) and Professor David Novak (Music)
2011	U.S. Dept of Education – Summer Foreign Language and Area Studies (FLAS) Fellowship
2011	University of California, Santa Barbara Department of Anthropology Summer Award
2010	University of Guelph – Improvisation, Community, and Social Practice Bursary
2009	University of California, Santa Barbara Luce Environmental Science to Solutions Fellowship

CONFERENCE PARTICIPATION

Conferences/Symposia Organized

2012	Beyond Utopia: Crisis, Values, and the Politics of Nature, Conference held at the Interdisciplinary Humanities Center, UC Santa Barbara, March 1-3 – Co Organized with Dr. Casey Walsh and Dr. Constanza Parra
2011-13	Cultural Anthropology Collective, UC Santa Barbara, monthly.

Panels Organized and Chaired

2018	"Expanding the Anthropology of Water: Aquatic Politics and their Extra-State Lives (Parts I & II)" at the 117th Annual Meeting of the American Anthropological Association in San Jose, California, November 14-18.
2013	Mediations of Ethnography: Research Proposal Workshop, Special Session with Guest Tom Boellstorff during the Mediations of Ethnography Workshop held at the Interdisciplinary Humanities Center, UC Santa Barbara, May 3.

Papers Presented

2019	"Development as a Culture Industry" at the 48th Annual Conference on South Asia in Madison, Wisconsin, October 17th-20th.
2018	"When Tech Runs High but the Water Runs Out: Corporate Power and the Paradoxes of Capitalism in Bangalore" at the 117th Annual Meeting of the American Anthropological Association in San Jose, California, November 14-18.

2018   "Liberalization's Patrons? Wealth, Mythic Capital, and Philanthropy within India's Tech Sector" at the 47th Annual Conference on South Asia in Wisconsin, Madison, October 11-14.

2017   "Futurists and their Nostalgias: Urban Water Memories and National Development in Bangalore's Tech Philanthropy Scene" at the Annual Spring Conference of the American Ethnological Society, Stanford University, Palo Alto, California, March 30-April 1.

2017   "Portals and Platforms: Digital Modes of Development in the Indian Water Sector" at the 77th Annual Meeting of the Society for Applied Anthropology, Santa Fe, New Mexico, March 28-April 2.

2016   "Becoming Moral, Becoming Sovereign by Way of the Body: Insights from the Life & Politics of Mahatma Gandhi" at the 115th Annual Meeting of the American Anthropological Association, Minneapolis, Minnesota, November 16-20.

2016   "From London to the Birla House: Insights from Affect Theory & Endocrinology Research on the Roles of Daily Bodily Practice in the Life & Politics of Gandhi" at the 45th Annual Conference on South Asia, at the University of Wisconsin, Madison, October 20-23.

2015   " 'Toilets are the New Schools:' Remaking Citizenry and the Developmental Field through India's Swachh Bharat Program" at the 114th Annual Meeting of the American Anthropological Association, Denver, Colorado, November 18-22.

2015   "The Rise (and Fall?) of the National Knowledge Portal Concept in India" at "NGOgraphies," the 2nd Meeting of the NGO and Non-Profits Interest Group of the American Anthropological Association, Denver, Colorado, November 17-18.

2015   "Tales of Contemporary Remediation and Conversion: Selling the Idea of the Toilet to 700 Million People" at the 44th Annual Conference on South Asia, at the University of Wisconsin, Madison, Oct 22-25.

2015   "Corporate but Not: NGOs, CSR, and Hiding Out in the Shade-Spots of Capitalism" at the Bangalore Research Network Workshop, August 1.

2014   "आई. सी. टीस. भारतीय पानी क्षेत्र में" ("ICTs in the Indian Water Sector," presentation given in Hindi) at the 3rd मीडिया चौपाल: नादियाँ (Media Workshop: Rivers), National Institute of Mass Communication, Jawaharlal Nehru University, October 11-12.

2013   "Tweets and Programmers: Water, Technologies of Power, and New Engineering in Bangalore" at the 3rd Annual Anthropology UCSB Graduate Student Symposium, May 31.

2012   "Where is the Utopia Here? A Synthesis of Anthropological Theories of Value in Contemporary Environmental Debate" as a Panel Discussant at Beyond Utopia: Crisis, Values, and the Socialities of Nature, March 1-3.

2010   "Modeling Nature: Restriction, Space, and the Emergent Water Cultures Along a Southern California River" at the 109th Annual Meeting of the American Anthropological Association, November 17-21.

2010   "Making Moves in Nature: The Body and Improvising the Human-Water Relationship Along a Southern California River" at the "Improvisational Bodies" Conference for Improvisation, Community, and Social Practice, University of Guelph, September 9-12.

TEACHING EXPERIENCE

Certificate in College & University Teaching (Spring 2017)

Emory University, Teaching Associate
    Anthropology of Water (Spring 2018)

University of California, Santa Barbara, Teaching Associate
    Introduction to Sociocultural Anthropology (Summer 2016)

University of California, Santa Barbara, Teaching Assistant
    Introduction to Sociocultural Anthropology (Winter 2010, Fall 2010, Spring 2012,
        Fall 2012, Winter 2014, Fall 2015)
    Myth, Ritual, and Symbol (Summer 2010, Fall 2013)
    Globalization in Asian/America (Spring 2013)
    Environmental Ethics (Winter 2011, Winter 2012, Winter 2013)
    History of Human Environmental Impact (Spring 2009, Spring 2010, Spring 2011)
    Introduction to Archaeology (Summer 2012)
    Introduction to Physical Anthropology (Fall 2009)
    Major Works of European Literature: Renaissance to Neoclassical Periods (Winter
        2009)

MENTORING EXPERIENCE

Mentorship/Student Research Supervision
    Undergraduate Research Assistants
        Alyssa Marceno (Anthropology & Psychology), Fall 2015-Spring 2016
        Karina Lopez (Anthropology), Fall 2015-Winter 2016
        Jason Barajas (Communication Studies), Fall 2015
        Andrea Negrete (undecided), Fall 2015
        Isaac Zakaria (Chemistry), Fall 2015

ART INSTALLATIONS

Woodstrup, Bart, Curtis Bahn, Jayeeta Chowdhury, **Lindsay Vogt**. Under the Saraswati River. Projections of digital photographs (Woodstrup and Vogt), sitar (Bahn), and voice (Chowdhury) performance.

2013   Digital Dome at the Institute of American Indian Art, Currents 2013 Santa Fe International New Media Festival, Santa Fe, NM
2012   The Arts Converge, Jack Olson Gallery, Northern Illinois University, DeKalb, IL
2012   Private Screening, Her Excellency Suvra Mukherjee, Rashtrapati Bhavan, New Delhi, India

RESEARCH ASSISTANTSHIPS

2010   UCSB Library, University of California Santa Barbara (Feb-Oct)
2011   Anthropology Department, University of California Santa Barbara (Feb-June)
2011   Communication Studies Department, University of California Santa Barbara (Feb Apr)

SERVICE TO PROFESSION

Association for Political and Legal Anthropology, *PoLAR: Political and Legal Anthropology Review*, Digital Editorial Fellow (2016)
American Anthropological Association, RACE Project – Outreach Volunteer (2008)

DEPARTMENT/UNIVERSITY SERVICE

Anthropology Graduate Student Symposium – Co-Organizer (with Lauren Smyth and Carmen Hove in
       2016 and Anne Pisor in 2013)
Cultural Anthropology Collective (Monthly Symposium) – Co-Organizer (2011-2013)
UCSB Anthropology Graduate Student Association – Secretary (2008-09)

LANGUAGES

Hindi: Advanced reading, writing, speaking, comprehension

German: Intermediate (level B1.1) reading, writing, speaking, comprehension

Spanish: Intermediate comprehension, Beginner speaking, reading, writing

PROFESSIONAL MEMBERSHIPS

American Anthropological Association
Association of Political and Legal Anthropology
Society for Applied Anthropology
Association of Asian Studies

FIELDS OF STUDY

Major Field: Sociocultural Anthropology with a specialization in Political Anthropology

Studies in the Anthropology of Water with Professors Casey Walsh, Teresa Shewry, and Bob Wilkinson

Studies in Critical Social Theory, Ritual Studies, and Social Space with Professor Mary Hancock

Studies in Technology and Society with Professor Lisa Parks

Studies in South Asian Studies with Professors Mary Hancock and Vinay Lal

ABSTRACT

New Water in New India: How Does IT Sector Philanthropy Re-Cast Water and Citizenship?

by

Lindsay Nicole Vogt

This dissertation examines a curious new configuration within contemporary development – the development philanthropy of high-tech sector entrepreneurs and institutions – in India. This wave of development comprises an increasingly common but under-studied realm of techno-scientific imagining and practice that is distinctly moral in nature. The moral dimensions of this field of activity are defined by interactions between people of widely differing class positions and also by the similarly classed ideological construction of their moral subject-types: (a) the tech entrepreneur-celebrity, whose economic success has cast them as a key symbol for both success and virtue in a neoliberalized economy and who often use their exposure to the public sphere to advocate for the idea that information and knowledge provide salient pathways to a more just society; (b) the development subject who is indexed as backward by her/his/their hygiene practices, livelihood, family size, language, and position in a rural economy and whose face is frequently represented but whose name is never known; and (c) the organizational form of the NGO and those who work there (often self-identifying as development practitioners or activists), categories which drip heavy with connotations of moral purity and sacrifice. In this

dissertation, I examine several programs that manifest this new configuration of development, asking the following questions: How and why have information, knowledge, and digital technologies become important development commodities? Who participates in a development based on knowledge transfer, information dissemination, and advertising campaigns? How does the application of tech sector aspiration and moral celebrity change the process and image of development? What historical forces have assembled the current cultural formation in which IT figures are seen as moral leaders and information is seen as a key to fulfilling the aims of national development?

With data drawn from ethnographic interviews, participant observation, web analytics, and two surveys, this dissertation explicates many day-to-day politics of development funded and envisioned by several well-known figures associated with the Indian high-tech industry as well as three higher order contributions to scholarship. Those contributions are as follows: First, I call attention to and investigate the particularly moral dimensions of the IT entrepreneur-celebrity figure, who has emerged as a patron of national development in India's post-liberalization era, as well as several programs of philanthropy some of these figures have enacted. Second, by investigating the philanthropy and visions of national improvement originating from the Indian tech sector and popularly fetishized senses of new technologies, I show how the larger task of development and the webs of relations it produces transform the world at multiple sites of privatized development brokerage. Based on these several sites of development brokerage, I argue that tech sector philanthropy is a form of patronage that often does not travel far. Its benefits, though socially constitutive as they create worlds of work and life, are largely conferred to elite class others rather than traversing to benefit those of significantly different class or caste positions. Lastly, I

conclude that the wealthy tech celebrities at the root of these development programs not only continually attempt to alter the larger social imaginary but that these attempts are often successful largely because their economic patronage of development programs (rather than their discursive or political influence) creates substantive impacts in the world. However, it is important to emphasize both that the most beneficial impacts of this development patronage tend to be concentrated to elite segments of society and that even though the high-tech industry figures I discuss in this dissertation do alter the larger social imaginary, they do so while acting in concert with many other, and much more potent, forces.

Table of Contents

Introduction

Behavior change in a South Indian village

"This is a rich village," Madhu said to me as we entered Katihalli, a small village in the South Indian state of Karnataka. "Banana, betel," she said. I could see the large fields full of mature banana trees and palms as we drove past them in a van Madhu and her team used to monitor and encourage toilet use in one district in central Karnataka. Madhu's introductory classification was intriguing to me and ruptured the classifications of "village" that I'd heard repeatedly during the rest of my research, which had focused much more on the insides of non-governmental organization (NGO) operations than the ultimate sites of interaction with any public, a complex and varied process often opaquely summed up by the word "implementation." In those spaces of NGO planning, networking, and administration, the word "village" was a blanket term which indexed states of underdevelopment as vernacular, impoverished, defined by low literacy and education, having little technology, and where caste and religious differences still get in the way of things. But the village also, sometimes, could stand for virtue and moral purity, including simplicity in daily life and desires, and honor in relationships. These conceptions of village did not yield an understanding that villages could very well be different from one another. Even though many people who work in NGO administration come from villages themselves or have close family that does, the conceptual girth of that idea, village, was usually singular and narrow in the Bangalore offices where much of my research took place. That villages could, for instance, be comprised of well over one thousand households or just nine showed up in spreadsheets that were broadcasted during project meetings but not in the single-tone, connotation-laden idea of village that occurred in discussions around NGO offices. Why did it not? Because this

knowledge – knowledge of what villages and their publics are like – is contracted out to others.

It had started to rain. We pulled the organization's van over to one of the few patches of dirt which was not used for cultivating palms next to a free-standing house. A few hens pecked about, and two baby Tellicherri goats looked at us as we approached the dwelling. There were two women and a couple of children sitting on the porch, curious about our arrival. Madhu approached the group with her customary first questions in Kannada: *Do you have a toilet? Are you using?* Whenever Madhu received an answer to these questions that she deemed unsatisfactory, she would commence a series of tactics: berating, shaming, educating a mother or father, often in presence of their small children, that what they were doing (or not doing in this case) could lead to grave diseases for their family. Madhu was not from the area, but she was Kannadiga (from Karnataka and a native Kannada speaker) and could easily enter into meaningful dialogue with those she encountered in the villages. While many people certainly resented her behavior – parading through the alleys of their village, discussing people's bathroom habits immediately and in as public a way possible, shaming those who did not use a toilet – she was also tolerated to an extent. Madhu's tenuous acceptance in the villages she was assigned to came from a few well-understood cultural tropes that had well preceded her: First, people seemed familiar with the idea of development workers who would come to inquire about and perhaps change village infrastructures. Second, Madhu relied on a common trope of South Asian femininity, the auntie, the *chachi* or, in Kannada, the *chikkam'ma*, whose role in the family is, in part, to criticize and shame others publicly, but to everyone's delight and humor.

Madhu's conversations could go in many directions. Sometimes Madhu discovered people who had built toilets in their homes independent of the development program that employed her, and the two would often commence a happy, mutually reverential discussion. Sometimes Madhu accumulated a crowd of witnesses who watched as she berated a person who was not maintaining a toilet or who had never built one. This crowd could mitigate the pressure placed on an individual by openly critiquing Madhu's logic, asking questions, or telling jokes. The inside logic was that many people did not have a toilet or want one, which Madhu knew despite her salaried task of convincing villagers otherwise. However, on this rainy afternoon in the outskirts of Katihalli, the conversation did not go well. As Madhu painted lurid descriptions of the health risks of open defecation – typhoid, for instance – and stressing the position of the parent as responsible for providing a healthy home for the children sitting on the porch, a man came out to see what we were all about. After listening for a couple of minutes to Madhu, who had been trained to place pressure on the father of the household as a provider, the man grew angry. He yelled at Madhu, and she left seemingly unable to convince him of anything. We got into the team's van and drove to the next village.

A portal and its national mission

> TS: When we really actually started on the portal, there was this initiative of the National Knowledge Commission that conceived of putting information in the public domain, situated very strongly within civil society, the data generated by civil society, and shared with civil society. Not state-managed information to be put out. There were a whole set of portals that were to be put out – one for education, one for environment, one for biodiversity, one for health… This was just a plan. It was encouragement from the government, the National Knowledge Commission, without any funding or anything like that. They just thought it was good a good thing to put out information in the public domain. … All the information and some of the operating principles were very, very clear: That there is no one organization that will have, that can have all of this information. Information has to be participatory. It has to be got

from various groups, various people, various institutions and aggregated on the portal.

In all, it took two years to build the Biodiversity Portal – to find funding, to design the architecture of the site, and to collect datasets, many of them from private sources, that would be featured in the geospatial layers of the portal. For T.S., as he told me on a sunny April afternoon, the portal has been as much a personal passion project as national mandate. He took a six-month sabbatical from his post at a bioinformatics corporation to build the portal, and the project has been a way for him to pursue his interests in ecology and mapping. During funding-rich times, T.S. and R.K., who oversees day-to-day operations for the website, are able to hire ecological researchers to "populate" the site with species information and identifications of biological sightings (e.g. plants and animals) posted by users, though populating the site is an unending task given that ecological expertise is so specialized and the biology of the Indian subcontinent, so vast:

> TS: The task of building a biodiversity information portal is going to be very, very large. If a person knows insects, a person is not going to know trees. If he knows butterflies … then he may not know much about anything else. There is a consortium that meets very regularly, and these are people who agree to the organizing principles of data, of the Biodiversity Portal. Essentially that biodiversity information is a public good and it must be open and publicly available to everybody. And that it will be, should be, a very open, inclusive, participatory information aggregation system. … Over years, we've seen attitudes change tremendously. 2008 to now [2015], even 2010 to now, we've seen attitudes change tremendously. Today, people understand the need to share data. People understand that all the data is coming out in the public domain. People are seeing benefits of using—of individually doing some research and using some of the publicly available data to understand their research. Different questions can be answered, because you don't have to go out to the field and collect data on biodiversity, so the whole paradigm of research is changing, and we'll see massive changes in the next few years. You'll have biodiversity information available like I don't know what. Really huge amount of information on species and their distributions across the world

available. So, the questions that you need to ask at that time for understanding the web of life and nature will be very different. These things will change very drastically.

LV: Do you think there is something that explains the shifts between 2008 and now in people's approach towards publicly shared information?

TS: Essentially I think it is the digital world expanding. Many things: the digital world expanding, the participation of individuals in the digital world, you know. It's no more state, it's individuals who are participating and creating all of this information. It's not big huge surveys of monolith government organizations, it's people who are providing this information. Crowd sourcing, the ability to crowd-source information, the ability to collect crowd wisdom, all of these things are essentially mediated by the digital world. I think that is the main [thing]. And you find that the force is so large that you are really irrelevant if you say, I'm not joining it. So, might as well join it. Even if you join it, you're irrelevant, because you only contribute a small little bit of information. So this is the attitude change I think that we've been seeing. …

RK: Generation of information has become easier. And also, access to information has become easier. I think these are breaking bonds with regards to people who are holding onto the information because it's valuable. Whereas, if information is generally accessible, the value of holding something back will turn, I think, with— People can get to it through other sources, and people can add to it. So I think the more information available, the more people are willing to put it out in the open, because it's not as valuable as it once was.

The Biodiversity Portal is largely a spatial and taxonomic database. The site aggregates, curates, and displays data on various species in India and the geographical distribution of ecologically relevant information (such as the distribution of dams in the Western Ghats or protected forests in the state of Assam) as well as ecological reports, peer-reviewed articles, and discussion fora (see Image 1, accessed January 19th, 2019). At the time of our interview, R.K. noted that the portal had about 5,500 registered users, and roughly 1,000 of them were actively posting information. Many user contributions are "observations" or sightings of particular species, though T.S. and R.K. try to keep the ratio of

Image 1. The Biodiversity Portal's homepage.

unidentified to identified observations low so that the site is more complete as a dataset and thus more broadly useful, especially to the scientific community: "The idea of the platform is where citizens come and experts come and together collaborate and build an information system that's valuable for everybody. So we should have experts coming and interacting. … Novices, people who don't know are matched with the experts, which means we have to recruit more experts." T.S. excitedly told me during our interview that the process of posting information, photographs, and geospatial details that the Biodiversity Portal facilitates has accumulated data used in peer-reviewed scientific articles and also contributed to the identification of a frog species that had never been documented in India.

Perhaps as the ironic destiny of a national resource system devised to be funded and controlled by many small, private entities, the several national information portals that emerged from the National Knowledge Commission's recommendations each became quite different from one another. One became, for instance, a government watchdog, another an online magazine, yet another a media archive; and then there is the spatial-taxonomic

database of the Biodiversity Portal. Most NKC portals, at the time I researched them in 2014-15, had been through periods of what T.S. called "just subsistence operation" – "dry" periods when there was neither funding nor paid staff but when the sites were still up and running. Though expansive in their mandates, most portals publish exclusively in English and online, modes of communication that only a small, largely elite portion of the population in India can access (particularly at the time when these initiatives were launched in the early 2000s). Even so, many of the portals' creators, like T.S. and R.K., envision a kind of democracy achieved through the portals and, more generally, through information management. They imagine or aspire to wide-scale participation in their online platforms, for that participation to come from all corners of society, and for people to achieve self-empowerment – even solve large social problems – through that participation.

Sam Pitroda and dreams of an "indigenous" development

October 20th, 2015. Broadcasting live from India Today's television studio in Delhi, acclaimed journalist Karan Thapar opens his nightly show with a brief introduction of his guest. His tone is laudatory but serious. The interview and all of the text on screen is in English:

> Hello, welcome. You're watching To The Point.
> India today has over 900 million mobile phone subscribers, so it's hard to believe that in 1980, there were just 2 million phones altogether in the entire country. Clearly in the last 35 years, we've had a telecomm revolution sweep through the country, and it all began with a body called the Centre for the Development of Telematics or C-DOT. It scattered the country with things called PCOs and STSDs, and as a result, today we've come to a situation where virtually every second Indian is a mobile phone owner.
> The story of that incredible revolution is published in a book called *Dreaming Big: My Journey to Connect India*. And its author is my guest today. He is the

> very man who is the cause of that revolution, and, to be honest, without him,
> that revolution may never have happened.
> His name: Sam Pitroda.

The focus of the camera has remained until this point on Thapar, who briefly holds up a hard

copy of *Dreaming Big* for the audience to see. The book cover features its author dressed in a

suit and standing large in the foreground with his arms folded in a stance of confidence. His

expression is one of accomplishment: a firm smile and a forward-facing gaze. Flashing

across the screen throughout the interview is the word "EXCLUSIVE" and statements such

as "Sam Pitroda on Dreaming Big" and "Sam Pitroda on Telecomm Revolution."

Throughout much of the interview, Sam Pitroda explains his close relationships with Rajiv

and Indira Gandhi, two previous Prime Ministers of India (both whose political tenure ended

abruptly by assassination), and his success in reforming telecommunications in India. Pitroda

then goes on to describe the future of development in India as advancing primarily through

the assistance of information communication technologies (ICTs): It is the Internet which has

completely changed business practices and the very people involved in business;

biotechnology will extend the biological possibilities of humans in the near future;

telecommunications, the Internet, and computing devices also are the ways "India" can fix

many of the problems of *Bhaarat* (meaning India in Hindi). In such formulations, whose

reliance on labels of indigeneity mask the ways such discourses leave other configurations of

power and violence undisturbed, Pitroda and others not only rely on problematic

connotations of the vernacular to indicate backwardness in statements that incite action

across political spectrums, but they also extol a broader philosophy about development: that

the modernized and technologized India should and can "fix" the rest of India, the India that

is impoverished (or backward) and non-technologized.

New Water in New India: How Does Tech Philanthropy Re-Cast Water and Citizenship?

The vignettes that open this dissertation illustrate examples of people who are connected to one another by a curious new configuration within contemporary development. At one core of this configuration are information technology (IT) institutions and entrepreneur-celebrities who draw upon information technologies, the prestige of high technology in Indian society in its post-liberalization period, and the political institution of the NGO to broadcast and enact new conceptions of social citizenship and development justice to the general public. The figures who comprise this new trope of moral heroism establish themselves in close proximity to – and are sometimes credited with accomplishing impossible feats of – national or international development. In their programs to remake the nation and worlds within it, they enlist others as development workers (administrators, cultural brokers, intermediaries, researchers, implementers), and they index who or what is in need of development, [self-]improvement, uplift, and modernization. At another core of this configuration are those who are framed as development subjects themselves: farmers, parents, shopkeepers, daily laborers. These subjects are each transformed, through development programming, into the poor, the unconnected "last mile," villagers, and open defecators. Threading throughout is a malleable entity that is highly valued by some but much more often forgotten: information. In this dissertation, I examine several programs that manifest this new configuration of development. Each is an example of private philanthropy or CSR (Corporate Social Responsibility) through which patrons from the Indian high-tech

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sector attempt to influence national development and establish new forms of techno-informational citizenship.

This wave of development comprises an increasingly common but under-studied realm of techno-scientific imagining and practice that is distinctly moral in nature. On the basis of their economic success and philanthropy, tech entrepreneurs are not only positioned as high-profile moral leaders, but they also advocate for the idea that information and knowledge alone provide pathways to a more just society. The moral dimensions of this field of activity are defined by interactions between people of widely differing class positions and also by the similarly classed ideological construction of their moral subject-types: (a) the tech entrepreneur-celebrity, whose name and face many can recognize and whose figure has become a kind of cultural idiom for virtue in a neoliberalized economy (innovative, open to failure, wildly successful, brainy and brilliant, non-traditional, creative but hyper-rational); (b) the development subject who is indexed as backward by her/his/their hygiene practices, livelihood, family size, language, and position in a rural economy and whose face is frequently represented but whose name is never known; and (c) the organizational form of the NGO and those who work there (often self-identifying as development practitioners or activists), categories which drip heavy with connotations of moral purity and sacrifice.

In this dissertation, I trace the genealogies of some of these ideal moral types and the cultural forces that have constructed them as such. Further, I build on literature that has discussed the often destructive repercussions of "the IT dream" among segments of society outside the select few who reap benefits from the high technology industry. Much of the literature that I build upon and which has taken on the task of critiquing high technology and its social repercussions has, like this research, been based in Bangalore. It includes work that

has examined urban youth and their aspirations (Nisbett 2009), the consolidation and reproduction of the middle class through IT (Upadhya 2016), the planning of the physical Indian city (Heitzman 2004), the ecological compromises made in the wake of IT-centric development (Srinivas 2001; Dasgupta 2015), and examples of digital e-governance that illuminate internally contradictory elements of neoliberalism (Mazzarella 2006; Ranganathan 2012). This doctoral thesis contributes to these discussions – and relies on the deeper histories they have offered – by examining how streams of IT sector funding and values creep to the countryside, the slum, and the social sector by way of NGO brokers and aspirational mission statements, creating a complicated array of ethical relationships and improvisations along the way.

The political dynamics that link these various actors rest upon assertions about the value of information, digital technologies, and their dissemination. With the advent and popularization of digital technologies, knowledge and even its much vaguer counterpart, information, have increasingly become valued development goods in themselves. But why? To what effects and affects? And who participates in a development based on knowledge transfer, information dissemination, and advertising campaigns? Additionally, how does the application of tech sector aspiration and moral celebrity change the process and image of development? What historical forces have assembled the current cultural formation in which IT figures are seen as moral leaders and information is seen as a key to fulfilling the aims of national development? In this dissertation, I seek to answer these questions.

The primary offerings of this work are three: First, I call attention to and investigate the particularly moral dimensions of the IT entrepreneur-celebrity figure, who has emerged as a patron of national development in India's post-liberalization era, as well as several

programs of philanthropy some of these figures have enacted. Second, by investigating the

philanthropy and visions of national improvement originating from the Indian tech sector and

popularly fetishized senses of new technologies, I show how the larger task of development

and the webs of relations it produces transform the world at multiple sites of privatized

development brokerage. Based on these several sites of development brokerage, I argue that

tech sector philanthropy is a form of patronage that often does not travel far. Its benefits,

though socially constitutive as they create worlds of work and life, are largely conferred to

elite class others rather than traversing to benefit those of significantly different class or caste

positions. Lastly, I conclude that the wealthy tech celebrities at the root of these development

programs not only continually *attempt* to alter the larger social imaginary but that *these*

attempts are often successful largely because their economic (rather than discursive or

political) patronage of development programs creates substantive impacts in the world. This

claim, however, must be qualified in two respects: The most beneficial impacts of this

development patronage tend to be concentrated to elite segments of society, and while I

argue that the high-tech industry figures I discuss here do alter the social imaginary, they do

so while acting in concert with many other, and much more potent, forces.

Methodology

From its beginnings and through the present, this research has tracked the moral and

political authority of the high-tech sector and its entrepreneurs who have emerged in India's

post-liberalization period and often frames themselves as custodians of national

development. In so doing, I have conducted a critical examination of the moral capital that is

produced at those locations where tech authorities and development intersect as well as the

ways these development programs produce their own politics (i.e. who they impact and how). Though this work often speaks to moments when tech sector figures have occupied roles within or as consultants to the Indian government, my research has maintained a focus on *private* pursuits of development made by those associated with the tech sector.

The questions underlying this research are thus as follows:

1) *What idiom of political and moral authority do tech sector figures maintain as they pursue programs of national development? What historical forces and transformations of capital underlie the prestige and position of tech sector entrepreneurs and companies, especially as they occupy humanitarian and patronage roles?*

2) *What visions and values of development, citizenship, and nation do tech sector philanthropists bring to their campaigns of national development? How do those visions and values change as they are enacted by/through staff, volunteers, affiliates, and development subjects?*

3) *What politics (dynamics of power and webs of relations) are created by tech philanthropy and CSR? Who participates in tech philanthropy and CSR, how, and to what impacts?*

4) *Why and how are information and technology valued as important development goods?*

5) *Do philanthropic actors affiliated with the high-tech industry actually alter the larger social imaginary or do they simply attempt to do so?*

Several important themes – development and citizenship, for instance – thread through this dissertation and set many of its stages, so before going into the sites of my

research and the methods I used to conduct it, it is suitable to take a moment here to clarify several concepts and their roles in this project.

Development

Even though development is a conceptual and institutional terrain rife with competing voices and influences, it tends to be construed as economic growth and/or the alleviation of poverty. The concept's definitions largely hinge upon how it is measured: At one extreme, when development is conceived purely as economic growth, it is measured as GDP, achievement in various economic sectors, or perhaps the distribution of economic opportunities. For many, however, economic advances are important only insofar as they can be translated to social and bodily wellbeing. Social advances, too, are not necessarily end-goals in themselves but rather indicators of a holistic kind of freedom and wellbeing for those living within a given society (Drèze and Sen 1995).

Scholarly discussions of development in India often begin by placing the poor or the state under concerted scrutiny in order to either assess development progress (see, for instance, Rudolph and Jacobsen 2006; Dube 1998[1]; Krishna 2011; Jeffrey and Jeffrey 2011) or advocate for a particular pathway to it (e.g. through, for instance, deliberate programs of redistribution by the state (Kohli 2010) or greater public investment in India's agricultural sector (Bardhan 1984)). The state occupies a central place in these discussions not only because it is the primary institutional administrator of economic regulations and social welfare programs for the nation, but because from the outset of Indian national

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[1] The works cited here are ethnographic analyses, but I call special attention to Dube's historical biography of one Indian family since Indian independence, which is a particularly beautiful exception to a genre that is often confined to describing people and their experiences of poverty with statistics.

independence, political leaders constructed the state to eradicate poverty and generate economic growth (Corbridge 2005). These commitments were made ideologically by, for instance, India's first Prime Minister, Jawaharlal Nehru, when he declared "The first task of this Assembly is to free India through a new constitution, to feed the starving people, and to clothe the naked masses, and to give every Indian the fullest opportunity to develop himself according to his capacity" (Constituent Assembly Debates: 22 Jan 1947 via Corbridge 2005, 54). The Indian state's commitments to development were echoed in its constitution and 5-year economic plans in multiple senses of the idea (in their emphasis on, for instance, poverty alleviation, self-fulfillment, growth of the national economy). These commitments were not merely ideological; they were sometimes etched into the construction of the state's institutions as well. Take, for instance, the Indian Administrative Service (IAS), which was a government institution inherited from the British colonial regime, like many of India's public institutions. During the colonial era, IAS (then known as ICS) officers were trained to "passively" uphold the laws and relations of the colonial order, but post-independence, the roles of IAS officers were drastically reimagined into what K.P. Krishnan and T.V. Somanathan describe as a distinctly activist mode: "From a position of minimal interference in the social order, the situation became one of redefining the social order by proactive use of state power. … The [First Five-Year] plan document clearly recognized this when it said that 'from the maintenance of law and order and the collection of revenue, the major emphasis now shifts to the development of human and material resources, and the elimination of poverty and want'" (2005, 274).

The work of development, in India and globally, is hardly confined to the state. It is constituted in the world through a large industry of both public and private actors – the state

(including its many tiers and associated organizations), non-profit organizations, multilateral institutions, private donors, and development banks and corporations – who fund and pursue development through various programs. Such organizations do not only arrange the institutional components of development, but they also host individuals and entities who have found work, salary, profit, prestige, authority, or moral fulfillment in the so called "development sector" (Mosse 2011; Lewis and Mosse 2006; Fechter and Hindman 2011).

This larger apparatus of development – and the institutions and people within it – do not fully shirk the global colonial order which preceded it, as the work of critical development scholars has shown (Escobar 1992; Ferguson 1994; Scott 1998; Gupta 1998; Crewe and Harrison 1998). Development is global order of governmentality that often situates "Western" (i.e. European and North American) countries as "developed" and as the "core" of a global economic order. Other countries, regardless of their geographic location, as Akhil Gupta (1998) reminds us, are imagined to be located at the periphery of this order. The very term "development" retains the temporal suggestion that some countries have achieved development whereas other nations, labelled as "underdeveloped" counterparts, are left to perpetually chase a more modern, a more developed future. This is a temporally-laden discourse that not only posits the "rest" below (and as lagging behind) the West, but the notion of underdevelopment also calls forth connotations of infantilism or prematurity, which, in turn, places Western, "developed" nations in a position of supervision over the development of the rest of the world. Development discourses, and the actions derived from them, thus often normalize a colonially derived global order of power and wealth, obscure its colonial histories, and create the identities and subject-positions of "developed" and "undeveloped" as salient categories in the world (Gupta 1998, 9-11). Like colonialism,

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development discourses that focus on economic or social uplift often obscure the deeper violence and acts of domination they underwrite. These critiques have proved essential to my understanding of development as a concept, practice, set of discourses, or industry.

This research is not grounded upon any one definition of development. Rather, I am interested in development as a concept and institutional apparatus that invites highly moralized claims that imply most, if not all, of society. I take development to be a semantic and institutional domain in which various actors forge senses of nationalism, moral accomplishment, and trajectories of possible national and international futures. As various state plans and promises have shown, development has been the primary fulcrum around which Indian political and economic discourse revolves. This applies across the political spectrum, from colonial administrators to independence-era activists, from proponents of economic liberalism to Hindu nationalism (who are not necessarily exclusive to one another), and across all political parties and administrations. For these reasons – and while following a distinctly anthropological imperative to understand the consequences, often unintended, of development (Ferguson 1994) – this research does not assess the functionality or success of the development missions and organizations studied here nor does it measure any parameters that might indicate development "success" or "failure." Further, following the work of Srirupa Roy (2007; Cinar, Roy, and Yahya 2012), I rather consider development, particularly programs and organizations which aspire toward development achievement, to be bolstered by a set of cultural performances and public messaging which enable elites to reset the visions for justice and national progress. In the programs analyzed here, the elites in question are NGO workers and IT sector entrepreneurs who attempt to reset the visions for justice and national progress within an issue that is at best indirectly related to IT: water. Development

thus is a means to examine contemporary politics within what is often framed as the "New India," a post-liberalization period wherein NGOs, philanthropists, and corporations have proliferated as political actors.

The founding and operations of the charitable organizations I analyze here exemplify a broader pattern of social investment that has emerged over the past several decades. Following the entwined processes of market liberalization and the tech industry boom, IT is often framed as a market-driven means for generating national wealth and achieving equitable development (Dasgupta 2015). The IT sector's technological and economic achievements have spawned much popular faith in IT's potential to solve tremendous social problems, such as corruption and bureaucratic stagnation. In some instances, IT entrepreneurs are invited to advise government officials and have been appointed to influential government posts. Tech sector entrepreneurs, software designers and startup founders by vocation, have subsequently come to be seen as important moral and political figures of the current era.

Because of its intrinsically moral and often nationally specific parameters, discourses and programs of development are important means by which various actors attempt to bend the definitions and practices of social citizenship for society overall (see, for instance, Scott 1998; Ong and Collier 2005; Sharma 2008). Studying the development institutions envisioned and funded by actors within the tech sector is thus a methodological maneuver that has led me to spaces and programs of social intervention that are designed to re-shape ideas and practices of citizenship and nation. Drawing from Marshall (1950) and Isin (2002) in my understanding of citizenship, I take citizenship to be an expression of full

belongingness in an imagined community, to dialectically produce inclusion and exclusion, and to be characterized by widely imagined standards or rights for appropriate living.

Focusing on the privatized development programs of wealthy tech figures has meant that several charitable, non-profit organizational forms – the philanthropic trust, Corporate Social Responsibility departments, and the broad institutional category which encompasses most development organizations, the non-profit or NGO – have acted as the ethnographic fulcrum of this research. Defined by what they are not (as *non*-governmental organizations or *non*-profit enterprises), NGOs are hardly the singular, uniform entities their moniker suggests them to be (Fisher 1997; Sharma 2008; Bernal and Grewal 2014). David Lewis and Mark Schuller call the NGO a "productively unstable" category for NGOs and anthropologists alike (2017). While non-profit actors can utilize the malleability of the NGO label to assert various agendas and identities depending on their audience, anthropologists can interrogate the linguistic and social fictions that uphold the myth of NGOs as a unified, generic entity. If anything, NGOs are windows to many governmental processes at work in an increasingly neoliberalizing world order, and studying them (or studying within them) reveals the diverse array of actors, roles, and interfaces which come together in the assemblage of development (Lewis and Mosse 2006; Schuller 2009; Mosse 2011). More a process or verb than entity or noun (Hilhorst 2003; Schuller 2016), NGOs are a kind of blank slate that reflects the political and ethical entanglements and commitments of those who they string together: funders, beneficiaries, staff or "practitioners," consultants, and imagined audiences (Lewis and Schuller 2017). Despite their malleability, NGOs are instruments of governmentality and power and are especially integral within a neoliberal political order where they are tasked with (or where they task themselves with) delivering services as states retreat from social

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welfare (Sharma and Gupta 2006; Ferguson 2010), producing neoliberal subjects or better

consumer-citizens (Kothari 1986; Sharma 2008), acting as the "glue" that holds

neoliberalism together (Schuller 2009), or even expanding state power (Fisher 1997).

Such "NGO forms" (Bernal and Grewal 2014) proved important in this research

project, for they are not only the chosen (and legally available) administrative units by which

a new cadre of industrialists transform national imaginaries and private wealth into

development programs. But those non-profit organizations that are closely affiliated with

India's high technology sector are also understudied sites of technoscientific practice wherein

tech and policy elites task themselves with re-imagining the nation or world anew and

operationalize those visions into reality through various development programs and

initiatives. This assemblage of actors and institutions represents an emerging pattern of

patronage in India's post-liberalization era that produces its own politics and reflects major

political shifts in contemporary Indian society.

Water, Infrastructure, and Information

Each of the development projects included in this study craft their philanthropic

personas by making some intervention to water. The need is certainly present: Today, an

estimated 100 million people in India do not have access to clean drinking water and many

more, 600 million, lack access to safe sanitation (Wheeler 2018; Estimates for the Use of

Improved Drinking-Water Sources: India 2012; Estimates for the Use of Improved Sanitation

Facilities: India 2012). Yet, water is not necessarily the most dire or immediate domain of

development intervention. It is thus appropriate to take a moment to explain what water is to

the project and why it has been one of the lenses through which I have researched the larger processes of tech sector philanthropy and CSR.

First, confining this study's scope to water initiatives simplified the project, because it ensured that I could familiarize myself with similar and overlapping sets of policy worlds, institutional actors, and ecological scenarios across study organizations. Water is a major issue within tech sector philanthropy, but it is certainly not the only area of investment – education and healthcare are also common philanthropic targets. Including healthcare and education initiatives in this study would have necessitated learning a much wider world of institutions, policies, history, and the development and everyday economies that cluster around those issues and objects. Perhaps avoiding these other areas of tech sector philanthropy upholds artificial and unnecessary boundaries between development "sectors" – boundaries that are maintained by powerful development actors, such as development banks and multilateral organizations, present-day iterations of colonial governance regimes. However, it is one way I chose to focus what could have been an otherwise unwieldy research horizon.

But water's place in this project is neither arbitrary nor a product of inertia. Simanti Dasgupta, in her work on water and IT in Bangalore[2], shows how attending to water unsettles

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[2] Dasgupta's study, *BITS of Belonging: Information Technology, Water, and Neoliberal Governance in India* (2015), is highly complementary to this research and shares similar questions in its investigation of the nuanced politics of Indian tech sector prestige and its relationship to neoliberal development. Any reader interested in these themes should also review Dasgupta's work (also 2012), which offers a glimpse into the ideologies and politics of those involved with Infosys (an iconic Indian tech corporation) an NGO interested in urban governance and citizenship, and a metropolitan water project in Bangalore from 2002 through 2006. In her ethnography, Dasgupta unsettles the narratives and projects which neatly compound discourses of IT success with neoliberal values, nationalism, governance, and citizen participation, revealing spaces of disparity (largely through water access in Bangalore slums) in a neoliberal political landscape which privileges the elite and middle classes; ultimately Dasgupta argues that the ideology of IT and the neoliberal ideology of the nation-state are constitutive of one another and have altered what it means to belong within contemporary India. In these ideologies, belonging, she argues, is largely asserted in negation of past models of socialist

what she calls the "IT narrative," a discourse which extols the Indian high-technology sector

as not only globally successful but, on the basis of its success and adherence to ethics

established by global capitalism, also worthy of contributing to national governance

(Dasgupta 2015, 3-5). But water, an issue that is at most tangentially related to IT[3], also

quickly reveals the fallacies in discourses which cast humanitarians from the tech sector,

whether acting as private philanthropists or consultants to government, as merely

technologists representing their core expertise, IT.

  Water, however, does not just unsettle that which it is contrasted against. It also can

reveal the political – political actors, agendas, structures, and processes – and this is,

foremost, why I chose to follow water within the landscape of tech philanthropy as opposed

to other "things." Generations of anthropological work on water have recognized the

substance's relationship to political power: The control of water by elites – both materially

and symbolically – has long been theorized as a vital basis to political power (Wittfogel

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redistribution and economic planning and, instead, through market participation (Dasgupta 2015). My research take place in similar, though different, institutions – the sites of tech philanthropy and CSR – and focuses on a slightly different aspect of what Dasgupta calls the "IT narrative" – the trope of information and information technologies as vectors for national development.

[3] While IT is of tangential importance to water, the reverse is certainly not the case: Water is essential for the generation of energy that information technologies require for operation, which is increasingly becoming a substantial portion of the global energy budget. Toby Miller explains in his analysis of the unsustainability of cultural practices which necessitate the near-constant use of new media, "The U.S. National Mining Association and the American Coalition for Clean Coal Electricity gleefully avow that the "Cloud Begins with Coal." They boast that the world's information and communications technologies use fifteen hundred terawatt hours each year – equivalent to Japan and Germany's overall energy use combined. That's 10 percent of global electricity – and 50 percent more than aviation. … Meanwhile, Google disclosed in 2011 that its annual carbon footprint was almost equal to that of Laos or the United Nations Organization, largely due to running its search engines through clouds" (2015: 133). In her study of Internet use in rural Zambia, Lisa Parks found that the Internet and ICTs more generally were made possible by water in several ways: water infrastructure provided the tallest point in the village and was thus the site where people had installed transmitters to enable radio and the Internet to be broadcast widely; women, who spent hours each day fetching water from faraway locations, were often too busy with domestic work to use or even know about the Internet but provided essential labors that enabled others in their household to do so; finally water, often unavailable in the community, is necessary for human settlement at all and thus the use of any digital technologies (2015).

1981; Lansing 2007; Worster 1992). Water infrastructures and water management systems are themselves material and bureaucratic residues of political processes and conceptions of citizenship (Walsh 2008; Anand 2017). Though most examinations of a hydraulic basis to power emphasize the control of water materially, some have also demonstrated that the symbolic control and contestation of water – including information about water – is itself highly political, often encompassing visions of what social citizenship looks like (and who can make claims upon it) and for the future of society (Mehta 2001; Mehta 2005; Mosse 2003; Rademacher 2011; Walsh 2011).

Two characteristics of water make it particularly proximate to the political: It is pervasive within daily life and vital to existence. Water suffuses social life; it is present within food and drink, it is required within all systems of sustenance and production in some way, and it courses through the ecologies in which we live. Ben Orlove and Steve Caton have called water a "total social fact," in the sense of Marcel Mauss's use of the term, meaning that it plays a central role in nearly all domains of human social organization (e.g. economy and exchange, religion, family and kinship, governance, etc.) and within many kinds of social relationships (2010). In these many points of contact with the social, water is hardly the uniform and singularly defined entity some scientific projects have constructed the substance to be; rather, water is largely conceived of, engaged with, and defined in multiple ways and senses (Alley 2002a; Strang 2004; Néstor and Martínez-Gil 2005; Linton 2010; Walsh 2018). Water is also absolutely vital to human existence, which further places it at the center of many contestations, from those surrounding basic rights and citizenship (e.g. access to safe and affordable drinking water) to complex and pressing environmental and economic problems (e.g. sea level rise, ocean acidification, natural disasters associated with climate

change, and waste disposal and filtration. These contestations play out at the most local to the most global of scales. These two aspects of water, its pervasiveness and indispensability, make it a durable "thing" through which people make political claims and seize or seek political control. Water is thus a key public good or object by which national-scale IT sector philanthropy can be considered: Water is the irreplaceable basis on which most other social welfare measures (such as nutrition, infant mortality, disease, and sanitation) depend, a vital material which connects all conceivable domains of human life, and a substance through which people make political claims and forge political identities.

In the context of South Asia, water is also an important object of philanthropic attention and political performance, because it is widely understood to be materially and spiritually purifying. Potent in its powers to cleanse, water is a key component to both cosmology and ritual across religious practices in South Asia. Water has religious and mystical significance within Islam as divine grace and the source of life. It is so necessary to sustenance and purification that it is often embedded in the architecture and patronage of *masajid* (mosques) and Islamic gardens (Asher 2009). Water is emblematic in Christianity through the immersive ritual of baptism and uses of holy water. Within Hinduism, water is spiritually purifying, particularly when it is from a revered, deified source, such as from a temple tank or the *Yamuna* or *Ganga* rivers (who are both rivers and goddesses) (Alley 2002b; Haberman 2006). The charitable organizations I studied never officially framed their work through these lenses; however, these numerous meanings of water do not just evaporate in contexts of Indian philanthropy even if water is primarily discussed technocratically, as a basic resource and a means to an end, at the sites of this study. Indeed, religious symbols and metaphors commonly crept into the ways NGO and CSR workers spoke of water. Though

much more scholarly attention has been paid to food as a religiously charged philanthropic good in South Asia, perhaps water is also deserving of this attention: As a much-needed substance for human sustenance and vitality, food is a spiritually auspicious item to give in both political patronage (Piliavsky 2014a) and as *dān* (a Hindu ritual of alms-giving) (Heim 2004; Dickey 2016), and so long as the giver gives without intention of reciprocity, the gift of food in *dān* creates spiritual merit for the giver (Heim 2004; Bornstein 2012). Within such relationships of Hindu philanthropy, food is sometimes seen to act as a vehicle by which energy (e.g. qualities of the giver, purity, pollution) passes from person to person (Marriott 1976). Thus, gifts of food can subsequently create spiritual benefits for those involved, even if status others. Such moral theories are seldom used to discuss water, yet philanthropic gifts of water have long existed in the history of South Asia in the form of *talab* (water tanks or small reservoirs) and wells (Heim 2004), and like food, water is also a vital substance imagined to carry the qualities of those who have touched it or even the divine. These additional connotations of water make it a valued "gift" within political patronage in India and one which can resonate across diverse constituents of South Asian society.

The literature which I draw from to understand water as a substance that inherently reveals the political often suffers from the shortcoming of what Casey Walsh has described as an "intellectual and infrastructural domination of 'waters' by 'water.'" He says, "Rather than devote energy to understanding particular waters and how they shape diverse human ecologies, scholarship on water in the twentieth century usually treated water as an inert, universal backdrop to the question of how humans organize themselves socially and politically to utilize the substance" (Walsh 2018, 7). It is possible that this project shares this weakness and that water has faded into the background, assumed inert within the social

dramas which surround it; however, I hope that this manuscript can be read from both directions – as an ethnography of politics (via water) and also as an ethnography of water, though both at a particular moment in post-liberalization India. Indeed, within the examples of tech sector development that follow in this dissertation, water shapes, limits, and delineates the way people think about it, write about it, use it, attempt to manage it, and organize their lives around it. Because water cannot be decoupled from the articulations of political power imbued through and by it, this dissertation offers an analysis of new forms of technocratic development but also a better understanding of how water, an issue perennially at the center of Indian national politics, is mediated by various actors within development. In this dissertation, I show how these mediations are multiple: Water is mediated by development philosophies, digital technologies and cultural practices of their uses, the very human labors that create "content," and the politics and values of emerging elite classes. But water is also a mediator: It drips about us as it falls as rain or in the shower, pooling into our hands as we cup them together, triggering an array of memories – creating a context which has inspired countless ideas throughout history, including the origin of one philanthropic trust discussed in this thesis. Water also finds its way through deep layers of sediment and rock, places where we cannot see or go. In a city such as Bangalore, the city where much of this research took place, which has no natural surface-level sources of water and whose man-made lakes are severely polluted, people exert great efforts to cull water from the depths of the Earth and to understand how water moves and accumulates there. Water is thus not just mediated by us; it also mediates our lives and very social structures.

The topic of water perennially resurfaces within anthropology, and the current moment is no exception. Brought on by recent ethnographic work that closely examines the

unique materialities of water and the infrastructures it moves through (or is held within),

water seems to be in the midst yet another high season of anthropological attention. Recent

research on water infrastructures as social-material-ecological assemblages (Gandy 2014;

Carse 2014; Barnes 2014; Bear 2015) has productively begun unraveling many previous

assumptions about political power as forged through water. Nikhil Anand's work, for

instance, has shown that the multiplicity of state bureaucracy, urban conglomeration, and the

tricky materialities of water and infrastructure in Mumbai hardly make it possible for the

state to fully control water, let alone people's access to it. State power, as reflected in water

distribution, is thus often much more flexible, tenuous, and conditional than classic theories

of the "hydraulic society" would suggest (2017). In Lisa Björkman's work on water in the

same city, we see that water bureaucracies are not all-knowing even of the infrastructures

they have built and manage everyday; rather, knowledge, such as that of the location of water

pipes (and the keys to open them), are often held only by those who operate the infrastructure

everyday and sometimes not even then (2015). In her study of the Itapú Dam, Christine Folch

has shown how a hydroelectric dam can be utilized in service of an authoritarian regime not

so much through the centralized control over water but rather through its bureaucracy (i.e.

administrative records), which state authorities used to trace and punish political dissidents

(2013). Like these studies, this dissertation too de-centralizes the analytical focus on the state

within the political anthropology of water, but it does so by analyzing how actors outside of

the state, namely private patrons from India's high technology sector, forge political careers

through establishing philanthropic relationships with water.

But here I analyze development projects that traffic in something that is quite

abstracted from the hard, fluid, matter-filled world of water and infrastructure – information.

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This research is thus an unintended counter-project to an anthropology of water that seems to be synonymous with critical infrastructure studies. The present is certainly a moment where humanistic scholars in STS (Science and Technology Studies) and anthropology, among other related disciplines, are productively assessing how far a studies of infrastructure can take us in our understandings of agency, materiality, ecology, urbanity, the political, and the effects of engineering science and urban planning policies, but this upswell of academic interest is not necessarily in step with the prioritization of infrastructure elsewhere. Infrastructure has long been a central paradigm and site of investment for development financing, with development agencies, public and private alike, often molding their development programs around building large infrastructures, such as roads, railways, telecommunications networks, dams, irrigation canals, and sanitation systems. But investment in infrastructure has declined across the globe in recent decades. For instance, large infrastructure projects hovered between 50 and 70 percent of the World Bank's lending throughout the bank's existence until the mid-1990s when the bank's lending largely stagnated in infrastructure (to 30% of the bank's lending portfolio) but grew in other areas (World Bank 2006). In their tracking of infrastructure markets, the World Bank anticipates increases in infrastructure investment in the future due to urban migration and global population growth (World Bank 2014), but they also note that overall private investment in infrastructure has been diminished for some time (World Bank 2018). At the same time, new buzzwords, indicative of changing development philosophies, are remaking the allocations of development budgets and even the way some infrastructure projects are pitched. Namely the common emphasis on "behavior change," "empowerment," "advocacy," "participation," and "transparency" has corresponded with budgetary allocations for advertising, education, and

other modes of information dissemination within development, especially in water and sanitation circles. For instance, within *Swachh Bharat Abhiyan* ("Clean India Mission"), the sanitation campaign launched in 2014 by Prime Minister Narendra Modi who promised to have toilets installed in every home and school in India within five years, the policy included significant expansions to its advertisement budget and reconceived toilet-building subsidies as behavioral "incentives" rather than as subsidies meant to contribute to toilet construction supplies. These dynamics, of course, do not diminish the intrinsic importance of infrastructure and critical studies of it – regardless of whether development budgets or imaginaries are constructed around infrastructure, infrastructure remains a vital component of life in the 21st century. It is deeply integrated into the design and life of human settlements, it is a fixture of most people's lives (even if invisible), it is the means by which many people access essential resources for life and work. However, as information increasingly becomes a feature of development, whether as advertising, education, or advocacy, it is important for scholarship to critically examine why this is so and what new relations and imaginaries are created in the process.

Bangalore and beyond

The institutional fabric of tech sector development, comprising intersections between private individuals, families, corporations, foundations and non-profits, multilateral organizations, and the state, is embedded in particular geographies and subsequently drew this research to certain locations. Foremost is the city of Bangalore, a metropolis that has maintained a diverse, cosmopolitan aura since long before the emergence of its current tech scene. Bangalore is the city in which dozens of Indian and international tech companies

maintain headquarters, a function of the city's decades-long effort to fashion itself as the

"Silicon Valley [Plateau] of India" through city and state planning exercises that have meant

to appeal to corporate actors within the high-tech sector (Nair 2000; Heitzman 2004; Nair

2005). Though it is hardly the only Indian city that seeks the moniker of India's hub for high

technology (competing there with Hyderabad, Chennai, and Delhi's satellite towns of

Gurgaon and Noida as well as a number of other cities), Bangalore has been dubbed the

"Science City" long before high-tech conglomerates began their occupations there. The city

was the site of numerous high-tech industries during the 20th century, including "the Indian

Telephone Industries (1948), Hindustan Machine Tools (1953), Bharat Electronics (1954),

Hindustan Aeronautics (1964), Hindustan Copper (1967), and Bharat Earth Movers (1967)"

(Dasgupta 2015, 22-23). In his work on science and religious nationalism in Bangalore,

Robert Geraci notes that the city's early industrialization within the textile and sandalwood

soap industries led to the development of an industrial and educational infrastructure which

proved well-suited to support Bangalore's later emergence as a high-technology hub (Geraci

2018). In 1905, for instance, Bangalore became the first city in Asia to erect electrical street

lighting. Just a few years later, the Tata family, known for its business enterprises and

philanthropy, selected Bangalore as the location for its Indian Institute of Science, an

institution of higher education which educated many of the first faculty of the Indian

Institutes of Technology and, later, people who would comprise the major software firms of

Bangalore (Geraci 2018). Bangalore was selected above other cities for the Indian Institute of

Science in part because of the promise of sustained economic and political support pledged

by Krishnaraja Wodeyar IV, the Maharaja of Mysore (Indian Institute of Science n.d.;

Bassett 2016) but also because its location in a princely state rendered the institute, as a

philanthropic gift, largely immune from the British Raj's control via the Charitable

Endowments Act of 1890 (Raianu 2017). Many people tell the history of Bangalore's high

technology boom as beginning with Texas Instruments' move to establish their overseas

headquarters in the South Indian city in 1985, but it was the pre-existing industrial and

scientific infrastructures which likely made Bangalore an appealing location for Texas

Instruments rather than the other way around (Geraci 2018). As a city which houses the

headquarters of many Indian tech companies, Bangalore is also where the private

philanthropy and CSR of those corporations, its entrepreneurs, and associated families are

based.

But non-profit and CSR offices in Bangalore were hardly the only sites of my

research. Delhi, as the seat of political power, also repeatedly drew this research into its

ambit. National development programs, policies, and conferences – which have the weight to

alter the terrain of development and thus the actors working within it – often originate from

Delhi, and the national capital is where non-profit representatives can potentially make or

rely on social connections as they negotiate larger shifts in the political landscape. My

research also took me to an array of sites, often outside of the metropoles but sometimes

within them, where tech development is outsourced to development brokers, where it meets

various publics, and, of course, the sites where development "problems" (and thus their

potential interventions) are identified. These locations were much more diverse than the non-

profit and corporate headquarters associated with prominent tech figures and their

philanthropies and included sites of implementation (e.g. villages and households where

toilets were constructed or where water conservation was measured), private residences

where non-profit workers or consultants pursued their daily work, public events such as lake

or river restoration festivals, development conferences, and the offices of numerous other non-profit organizations.

Study institutions and initiatives

The programs that I selected as case studies for this research were embedded within one of two separate organizations: Jaldana, a philanthropic trust, and Pearl, a tech corporation.

Jaldana's mandate focuses on achieving sustainably sourced and safely managed water for everyone in India, and its endowment comes from and is managed by a family closely linked with one of India's largest IT companies, Revolate Technologies. Jaldana is just one of many philanthropic investments made by the family, which also invests philanthropically in literacy programs, book publishing, and computerized learning games and sharing platforms. I studied two programs within Jaldana as a part of this research.

The second organization, which housed the two other programs of this study, consisted of the CSR unit within Pearl, another large Indian IT firm. Though CSR has been legally mandated in India since 2013 for companies above a certain size[4], the various portions of Pearl's CSR division pre-existed this law, dating to the early 2000s, and include programs which focus on improving health care in communities surrounding Pearl facilities and dually acting education and sustainability departments. The company has engaged in various forms of institutionalized corporate do-gooding since at least 2000 in many areas (e.g. disaster relief), but its primary focus areas are education, environmental sustainability,

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[4] Under the Companies Act of 2013, companies which annually conduct 1,000 crore Rs. or more of business, have a net worth of Rs. 500 crore or more, or have a net profit of Rs. 5 crore or more are required to designate at least 2% of their average profit for CSR. The law went into effect in April 2014 (Bansal and Rai 2014).

and healthcare. Pearl's CSR offices are located in the corporation's international headquarters in Southeast Bangalore where CSR staff oversee corporate disclosures and various social programs such as water conservation measures (within and outside of Pearl's campuses), educational programs, teacher training, and a lecture series for employees. Pearl's CSR division is internal to the corporation unlike Pearl's employee charitable foundation or the several foundations and educational institutions funded by Pearl's Chairperson.

I selected private charitable work associated with Revolate and Pearl, as opposed to other tech firms, because these two companies (and their executives) form important poles within the social imaginary of tech sector prestige in India: Private conversations and news headlines alike often closely track the successes and falls of the two companies or the whereabouts and activities of their employees. Several executives of Revolate and Pearl have also tended expansive careers as philanthropists and public servants, which have garnered them further position and prestige. As such, Pearl and Revolate are points of national pride for many and have come to symbolize much more than the singular business enterprises that they are. Their charitable work, which is designed to convert economic capital into moral good and public prestige, is thus an important node within a moral economy that recognizes Pearl, Revolate, and those associated with the two companies as heroic exemplars for society overall.

To be clear, Jaldana and Pearl's CSR are just two of many instances of non-profit development work affiliated with the growing Indian tech sector. Their "NGO forms" – as philanthropic trust and CSR enterprise – are two of many that emanate from the tech sector. These forms also include voluntary associations or charitable campaigns and for-profit

"social entrepreneurship," which can exist in a range of relationships to tech institutions and actors. They can be organized, funded, staffed, and/or managed within or as separate ventures from tech corporations by employees, entrepreneurs, founders, or their families. Still, among the various philanthropic actors among India's tech scene, I sought to include charitable work associated with Revolate and Pearl (or their founders) in this dissertation because of the importance of those figures within contemporary Indian politics and philanthropy. I further selected Jaldana and the CSR of Pearl, as opposed to other philanthropic or charitable institutions, because they are located in close proximity to their donors, who often have a great deal of involvement in the operations of their enterprises. Studying Jaldana and Pearl's CSR offers greater insight into the politics of tech philanthropy than, for instance, organizations where the involvement of tech patrons is more removed. However, future research could study this world more comprehensively by analyzing similar forms – CSR initiatives across tech companies, private family trusts, employee volunteer efforts, or all of the philanthropic endeavors of one individual.

Jaldana

WaterWeb

WaterWeb was established in 2006 by Jaldana as a response to recommendations made by a national committee commissioned by the national government which suggested creating national knowledge portals on pressing topics within Indian society, such as water and education. WaterWeb identifies water quality and access as keys to social justice and national development and, further, maintains that digitally disseminating information is the means to achieve these aims. WaterWeb, following its parent institution's mandate in seeking

safe and sustainable water for all, strives to alleviate injustice caused by "informational asymmetries" by putting information pertaining to water management in India in one central place – waterwebofindia.org – and by disseminating "best practice" models in novel public events such as a multi-state *yatras* (long-distance procession), a 'water hackathon' (a 48-hour session during which computer engineers programmed mobile phone applications for improved water management), or other public festivities and education programs. WaterWeb's website acts as a platform on which water sector professionals, activists, and the general public can share information, cultivate popular interest on water issues, foster well-informed debates, share best practices, and thereby solve problems of water access and sanitation. WaterWeb is built on the principle that the open dissemination of information will lead to progressive social change. Thus, WaterWeb's direct involvement in water conservation, management and distribution is limited. Rather, WaterWeb's activity is mostly invested in the formation of data archives and various forms of public education. During this research, I worked for WaterWeb as an intern with the agreement that I would give them feedback and reports for their strategic planning.

Communication CHANGE

The Communication CHANGE (CC) project, also internal to Jaldana, started in January 2012 as a media campaign that would be folded into Karnataka State's *Nirmal Bharat Abhiyan*, or "Clean India Mission[5]" but, over time, also became a project to facilitate toilet construction and monitor their use. The initial premise of the project was to consult the expertise of advertising and marketing firms, whose professional success depends on selling

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[5] This initiative has continued under Prime Minister Narendra Modi's administration under a slightly different name, *Swachh Bharat Abhiyan*, and rebranded image.

commercial products, to help the NGO create media campaigns that effectively change the habits and behaviors of those who were subjected to them. As such, this particular campaign was built around not just enhancing awareness but specific behavioral goals: to get people to install toilets and to use them. In many cases, achieving the program goals requires helping people understand government programs that could sponsor toilet construction or giving support to local governmental units as they processed applications; in other cases, it requires learning the psychological and cultural forces behind toilet use practices. Based upon the hired assistance of a marketing agency and a media research firm, Jaldana created a media campaign that played upon locally specific mores to place emotional pressure on people, especially fathers, so that they would construct and use toilets. The program also organized camps to assist people with applying for government subsidies to support toilet construction and hired a locally based team to oversee construction and to monitor and encourage subsequent toilet use. Jaldana piloted this work within one district in central Karnataka, which had high rates of open defecation for a period of two years. The project then moved to a second site in northern Karnataka at the invitation of the state government.

WaterWeb and CC Project were not the only programs overseen by Jaldana, which also funds many water and sanitation projects throughout India and whose home office teams focused largely on mentoring grantees and continuing education in the organization's thematic areas of water and sanitation. Aside from WaterWeb and the CC project, there were only a couple of other programs overseen more extensively within Jaldana – one which focused on fluoride mitigation advocacy and integrating springs into water policy and planning frameworks. Among these, I selected WaterWeb and the CC project to study for

several reasons. First, as two of the few programs that were run largely within Jaldana, WaterWeb and the CC project were expressions of core values, work processes, and negotiations internal to the organization as it pursued its development missions (rather than those of its grantees). Second, the primacy of communication at the heart of both WaterWeb and the CC project not only reflected a priority I have come to see as intrinsic within development philanthropy originating from the tech sector, but it also promised to, again, reveal intimate values, exchanges, and negotiations about development, development subjects, ethics, justice, and citizenship held or made by Jaldana and its staff. The extensive communications made by WaterWeb and the CC project are ultimately addressed to various publics who are in some ways meant to act as the subjects through which development futures are enacted. As such, the many communications which formed these programs contained discourses about development, water, and citizenship, but they also were importantly indications of the relationships that comprise development itself, for they were gestures and speech acts made between Jaldana's programs and those people it attempted to influence.

Pearl CSR

Greenpath Education Program for Schools

Greenpath is an educational program on environmental sustainability for schools and colleges around India. The program, which began in 2009, runs in one- to three-year cycles and is overseen by Pearl's CSR division. During the first stage of the program, groups from schools and colleges from across India submitted school projects in English or Hindi on environmental sustainability. Student groups had the choice to complete different projects

depending on their class level and age. Project assignments consisted of several components, such as a water-themed project for students in Classes 7-10, for example, which required student groups to map the water sources in their educational institution, test the water quality at several sources and compare levels of contamination and potability, and write a series of essays on the importance of conserving water. College students could choose to write two essays in response to more philosophical prompts, such as those asking about the values of deep ecology or the tragedy of the commons. Once student groups submitted their final work, the second stage of the program, final award selections and an extended education relationship, began. During this stage, about 30 student groups were chosen to receive an award for their work. Benefits of the award go well beyond mere recognition and title, as winners, who include participating students and their teachers, were invited to a trip to the Bangalore awards ceremony, which featured musical performances and lectures by established scientists, and presentations from fellow awardees. While award-winning student groups ended their participation in the program after the awards weekend, their teachers were enrolled in a 2 year "continued engagement program," an extended mentoring relationship with Pearl's Education and Sustainability Departments. During this period of mentorship, Pearl's CSR team advised teachers and schools in integrating sustainability more permanently into their school's curriculum.

Bhoomi Poorni or Earthful(l)

  This community mapping and awareness project, alternatively called Earthful(l) in English or *Bhoomi Poorni* (full Earth) in Hindi and Kannada, commenced and celebrated its 1-year anniversary during the course of my field research in 2014-15. The project had been

just funded for three years by Pearl CSR and began soon after the company conducted an "in-the-fence" water resource assessment of one of its IT campuses. When the assessment came back with an alarming prognosis (the company is located in a water-stressed area of Bangalore), those at Pearl were persuaded to use community mapping as an exercise to not only increase awareness of the groundwater it is dependent on but also to generate a kind of long-term water preservation community in the area. The project involves an array of activities, all of which revolve around restoring urban groundwater levels: measuring the level and quality of groundwater in the area, displaying the groundwater levels and their seasonal fluctuations on an openly available online portal, enlisting residents and employees in the area to volunteer their own borewells for measurement and to help raise community awareness of groundwater availability and sustainability, monitoring the fluctuation of groundwater levels and its impact on the 15 lakes nearby, and making public demonstrations and appearances within the project area. In addition to the many activities designed to raise awareness about groundwater levels and use, the project also attempts to form liaisons within the city government, the Bangalore Municipal Corporation, and state pollution control board to make groundwater management policy suggestions for the city.

Greenpath and Bhoomi Poorni were the only initiatives within Pearl's CSR that focused on water. Framed primarily as information dissemination projects, they were in line with my research foci and could reveal approaches, imaginaries, values, and relationships that make up development programs for Pearl's CSR group. Aside from their corporate disclosures, Pearl's CSR team runs only one initiative internally – its Greenpath education program – so this program also offered a deeper window into how Pearl envisions and

pursues development rather than how various constellation of partners do. Pearl's CSR team was particularly energized about the newly initiated Earthful(l)/Bhoomi Poorni. I chose to follow that enthusiasm, for it suggested that the project embodied many of the team's hopes, values as well as potential future directions of their CSR work. These were thus the two programs within Pearl's CSR program that I selected to study for this dissertation research.

Together, these projects and their parent organizations offer important case studies of the larger phenomenon of development funded, imagined, and pursued by tech sector entities for several reasons: The capital accumulated from the emerging IT sector funds them, the values of IT elites who now have a great deal of political influence craft visions of each of the organizations, and each are based on the premise that IT itself can offer much to solve existing crises in India. These initiatives are, in part, the outcome of the structural influence of select members of an IT intelligentsia, who have published books on re-imagining the nation, appeared on popular national television shows, and spearheaded large-scale government programs, including *Aadhaar*, a biometric identification program, which has promised to reprogram national redistribution programs. In sum, these initiatives and their parent organizations are the articulation of an IT-empowered class of elites who, while rising to prominence as leaders of the new economy, advocate for – and initiate – new definitions and mechanisms for development justice and social citizenship.

Data Collection

Data collection for this dissertation took place from September to November 2011 (pilot research) and March 2014 to August 2015. During these periods I collected data in

various formats: audio recordings of interviews, meetings, and conference proceedings; daily field notes, photographs, an electronic survey, and web analytics. During my field research, I was affiliated with the Institute for Social and Economic Change in Bangalore where I received monthly guidance and feedback from Dr. S. Manasi, who was then Associate Professor at the Centre for Research on Urban Affairs. I divided the fieldwork into two distinct parts, which I often pursued simultaneously and which were always subject to adjustment depending on the time and travel cycles of the organizations that participated in the research.

Part 1: Four Development Initiatives Funded and/or Overseen by Tech Companies or Entrepreneurs

Part 1 was dedicated to studying the institutional culture and development work of the four initiatives described above. I employed methods of participant observation at each program's office spaces and public appearances as well as ethnographic interviews with willing employees and volunteers associated with each initiative. For the duration of the project, I worked as an intern in one study organization, Jaldana, where I was a participant (and) observer in the institutional culture and public events of the organization. My aim throughout this phase was to understand the values, time discipline, work habits, and planning that comprise the visions and values of each organization and their members. In addition to learning the everyday institutional culture that underlies each organization's work, I also joined staff when possible in casual outside-of-work events that exist in commentary with the working day. I traveled to the locations of consultant work spaces and sites of program outreach to document the work processes, values, program logistics, and the

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relationship dynamics (internal to the organization, with partners, with members of the public, etc.) there. During this phase of the research, I interviewed approximately 45 staff members and volunteers among the four initiatives and conducted participant observation over the course of eight months. This research is discussed in Chapters 3-5 of this dissertation.

Part 2: A Comparative Analysis of "Knowledge for Development" Initiatives

Part 2 consisted of data collection for a comparative analysis of "knowledge for development" organizations, some of which were associated with tech companies and entrepreneurs and some not. To fulfill this portion of the research, I conducted ethnographic interviews with representatives of 30 organizations whose primary development intervention is disseminating information or "knowledge." Each representative who I interviewed held at least a managerial role in the organization. I sent each interviewee interview questions in advance, which included questions about the history and development of the organization, the mission or mandate of the knowledge initiative and if it had changed over time, who the actual and potential future audiences were, who contributed to the knowledge production of the project and how, organizational partners and funding strategies, the organization's own staff structure and labors, the processes of knowledge production or content creation, as they often called it, and the channels by which its information was disseminated. With these questions, I attempted to document a kind of biography of the organization while simultaneously trying to understand what constituted knowledge for them, who that knowledge reached, and how details such as formatting and genre, dissemination channels, or workplace organization further mediated that knowledge as it was sent to and consumed by

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various publics. When possible, I supplemented ethnographic interviews with analysis of additional materials, including the organization's websites or platforms (when online), annual reports, and other communication materials. This portion of the project, Part 2, helped contextualize the overlapping fields of tech philanthropy and CSR with "knowledge for development" (K4D) and ICT4D (information communications technology for development) initiatives. I present the research related to this comparative analysis in the second chapter of this dissertation.

Given the fame, wealth, and formal involvement in the state of the patrons at the roots of the organizations studied, it is sometimes impossible to anonymize philanthropists or executives
who fund or are otherwise associated with the development programs I discuss here. Their involvement in well-known or unique government programs, committees, and policies render pseudonyms futile. However, to the extent possible, I have maintained confidentiality and whenever possible, I use pseudonyms to anonymize the individuals and organizations discussed in this volume.

Historical context during fieldwork

This research, the questions it arose from, and the institutional fields in which it made inquiries are situated within a historical context that particularize this project in important ways. Foremost, this is an ethnography about identities and institutions that owe their emergence and forms to the social changes brought forth by economic liberalization, a set of widespread policies and cultural shifts that first began in the late 1980s and have continued

into the present. By 1991, the year that liberalization policies were inaugurated by the central govenment, India was transforming seemingly irreversibly from what Atul Kohli describes as a "reluctant pro-capitalist state with socialist ideology to an enthusiastic pro-capitalist state with a neo-liberal ideology" (2010, 2). This was a great shift for what had historically been a state that defined itself by the redistribution of state-owned and regulated industrial growth, and over time, these policies and the cultural changes that accompanied them have indelibly reshaped Indian society. Indeed, Gupta and Sivaramakrishnan argue that "liberalization and decentralization have arguably changed the Indian state more in the last 10 years than in the first 50 years after Independence" (2011, 2).

Liberalization policies have ushered an array of corporate, private, and sometimes foreign entities into the Indian economy and governance processes. This research, thus, is not a mere check up on the eventualities of new technologies (IT) as applied to development or of a new generation of industrialists and their philanthropy. Rather, this dissertation is an ethnography of liberalization and some of its effects, for economic liberalization created many of the fields this research explores: It created the several registers of capital and value which have made the Indian tech sector not only one of the largest in the world but also into an aspirational regime which sets standards for the success of individuals and the nation alike. Liberalization has prompted deeper structural shifts within Indian society by modifying the core values related to citizenship, nationalism, virtue, and, thus, development. In an era which has not only decentered the state as the primary agent of economic development but has also positioned the tech sector as a market-driven means to national prosperity, this research examines the private modes of development pursued by prestigious actors within the tech sector.

But other recent historical churnings have proven important to the conditions of this research as well. The first time I went to India, in late 2011, there was a national uproar surrounding the importance of information and transparency in governance which congealed around activist Anna Hazaare, the anti-corruption movement, and previous iterations of the Right to Information (RTI) Act. Though those campaigns did not succeed in their ultimate goal to pass legislation that would have created an official body through which the highest officials of Indian politics could be tried for corruption, it fired up many people over issues of open-access information and governmental transparency, including the offices and people who would later participate in my research. The anti-corruption movement was the seed from which sprung the Aam Admi Party, which means Party of the Common Man and is often known by its acronym, AAP. In a historical moment when the Congress Party of India's independence movement fades ever further into the margins and Hindu Nationalism seems to be rising up in more and more places, even the highest political offices of India, AAP is a progressive political party which has sometimes proved a formidable challenger to governmental instantiations of Hindu Nationalism.

When I arrived in Bangalore to do the majority of this fieldwork in early June 2014, Narendra Modi had taken office as Prime Minister not even two weeks before, and a slurry of political changes were afoot. In the first few days of my fieldwork, which were filled with meetings for reconnecting with research participants and all the tasks required of setting up life in a new country, I recall reading newspapers at breakfast that seemed to trace stark movements in the contours of the Indian state. For instance, NGOs with foreign funding were placed under investigation for undermining national development, stalling the national GDP, and serving foreign interests (The Times of India 2014). Organizations targeted included

those who could be cast as radical and, more importantly, those who critiqued Modi and his party, the BJP, including Greenpeace and the *Narmada Bachao Andolan* (Save the Narmada Movement), but other targeted organizations were more moderate, such as the Ford Foundation. Over the next several months, this issue played out and effectively froze many non-profits who feared having their registrations candidly denied at the time of perfunctory renewal or becoming the subject of future investigations and blacklists. In another development, the State of Gujarat was given approval to raise the height of the controversial Sardar Sarovar dam just days after Modi, who had just left the highest ranking political office in Gujarat, took office as prime minister (The Hindu 2014). Once the dam was raised in 2016, Modi ceremoniously celebrated the new work on the dam on his 67th birthday and "gifted" the dam to the nation (Tere 2017). The National Knowledge Commission, which I had followed because of this research (see Chapter 3), was a policy advisory committee established under the previous Congress government. It was dismantled soon after Modi's government took office. Aadhar, then a voluntary biometric identification program in development under the previous government, was likely on its way to the dustbin as well (BJP Attacks Aadhaar Scheme, Says It Violates Right to Privacy 2013; ET Bureau 2014a; ET Bureau 2014b; Business Standard 2014; Krishna 2014; India Today Web Desk 2016).

In the months that followed, the Modi government began introducing what would be its signature initiatives. With *Swachh Bharat Abhyian* ("Clean India Campaign"), launched on M. K. Gandhi's birth anniversary (October 2nd) in 2014, Modi promised to eradicate open defecation India and to construct toilets in every home and school within five years all the while attempting, it seemed to me, to carefully recraft the image of Gandhi's radical political legacy into one defined by sanitation concerns – and, perhaps more subtly, Hindu-centric

caste differences connoted by sanitation concerns – rather than civil disobedience, militant non-violence, self-reliance, anti-consumerism, or inter- and multi-faith religious acceptance. As I watched Modi, his administration, and celebrity brand ambassadors launch and publicize *Swachh Bharat* with great energy and fanfare over the course of 2014 and 2105, many participants in my research, people who had been working on practically the same initiatives for years, remarked that *Swachh Bharat* was merely a rebranded version of past national initiatives (previously called *Nirmal Bharat Abhyiyan* or "Clean India Campaign" and, before that, Total Sanitation Campaign). "Make in India," another initiative, has been Modi's economic platform to woo foreign multinational companies to Indian manufacturing services. The *Ganga ki Safai* ("Cleanliness of the Ganga") conversation, like that of *Swachh Bharat*'s nationwide sanitation plan, was nothing new at the time Modi took office, but Modi attempted to align himself with the issue as if it originated with his administration. He designated Benares as one of his "home" constituencies during the 2014 election (in India, political candidates can claim two voting precincts as their base), which likely served to Hinduize his political image even further. Within subsequent *Swachh Bharat* policies, Modi included a series of measures for addressing pollution in the Ganga, a move likely designed to create not only the optic of political will and action to clean the river but also a visibly political commitment to a sacred body and deity within Hinduism.

Modi's administration did not just re-brand (and Hinduize) old initiatives and introduce them as if new, but it has also deepened India's commitment to economic liberalization in significant and novel ways. The most significant of these maneuvers which occurred during my fieldwork was in late February of 2015 when the Centre released its annual budget. The budget made obsolete the Five-Year Plans which have characterized

India's government planning and economy post-independence, instituting an array of budgetary shifts among government programs, particularly various social welfare initiatives. After my principal period of fieldwork was concluded, Modi's administration continued to enact legislation and policies in the attempts to define its legacy. These events included the sudden and thorough drive of demonetisation in 2016 and 2017 and the 2017 rollout of the now mandatory *Aadhaar*.

In some ways, this research has been about coming to terms with a new kind of national development, one that has been reconfigured by liberalization. However, the historical events I watched unfold during and since my fieldwork 2014-15 show how mobile indeed are the wheels of fortune and history. Political events such as the ascent of the Modi administration or the passing of the mandatory CSR initiative in 2013 are hardly localized occurances, for they too have reconfigured (and continue to reconfigure) the larger terrain of development in India, including the shape and function of the state, how NGOs such as the ones I studied work in conjunction with political and economic actors, and the purpose and definitions of development itself.

Contributions to Scholarship

This dissertation, though researched and written within the academic discipline of sociocultural anthropology, may also be of interest to practitioners and critical scholars of development as well as those interested in the social and cultural worlds of high technology. In this study, I bring anthropological studies of the IT sector and the media it produces into conversation with political anthropology to tell the important story of how IT wealth and ideology increasingly operate in pursuit of development through Internet use, open access to

information, and public performances. This work makes one primary and several secondary contributions to scholarship: The philanthropy and CSR of the high-technology sector is the site where a new form of patronage, one deeply entwined with India's ongoing liberalization and built on the prestige of new technologies, has emerged. With this research, I present a critical analysis of this system of patronage as an emergent iteration of neoliberal governmentality and, at times, techno-informational citizenship. This doctoral work thus offers, foremost, an extended ethnographic study of the development philanthropy, or patronage, of several actors within India's high-technology sector, its ethics, and some of its larger influences within society. As such, this study contributes, on one hand, to discussions of patronage in India, which have not extensively examined figures and idioms of patronage which have emerged because of economic liberalization, and, on the other hand, this work also contributes to anthropological studies that have focused on the political economy of the tech sector, as such studies have focused on working conditions and changing social identifications of tech sector workers rather than the moral and political claims made by the tech sector's highest elites.

In addition to this main contribution to scholarship, this research also builds upon two other ongoing discussions within sociocultural anthropology: For academic research concerned with the moral orientations and effects of NGOs as they pursue development, I show, at various places within the dissertation, how justice and the senses of good upon which development is predicated shift depending on the position of actors who are charged with dispensing it. For the scholarly discussions that are concerned with relationship of water and political power to one another, a discussion which has long centered on state institutions

and actors, I offer an examination of private actors who have specifically selected water to forge their philanthropic prestige.

As an ethnographic study of the distinctly moral dimensions to the IT sector entrepreneur-celebrity figure and of the ethics that emerge in the wake of that celebrity, this dissertation contributes to histories of science and technology that have not yet fully accounted for the increasing political authority and influence of IT sector entrepreneurs, workers, and institutions. The moral orientations of the tech sector are not confined to its industrial spaces; they also work their way deeply into political structures, popular culture, and the everyday. These moral orientations can be readily found in pronouncements made during public appearances about better national (and international) futures, the heroic portrayals of IT figures (institutional or individual) as they are mythologized in popular media, and, ultimately, the actual spaces and relationships created IT sector non-profit funding or political consulting. Assertions of IT as emblematic of a "New India" based on transparent, market-based governance and global economic competitiveness are so broadly applicable that Dasgupta argues that IT can be thought of as a metaphor for the middle class's assertions of market-based means of societal "participation" and its claims upon the Indian state (Dasgupta 2015).

The social phenomenon of IT sector philanthropy occurs at a time when non-governmental organizations have multiplied profusely in the changing political landscape of neoliberalizing states such as India (Fisher 1997), encouraging a kind of 'new politics' in which people participate in solving their own problems as consumers or citizens (Harriss 2011). Modern non-profit organizations first originated in India under the influence of British

colonial law which was designed to track and control Indian philanthropy (Rudner 1994).

The NGO form then proliferated in India during several crises of agricultural production as well as the "basic needs" agenda set by Indira Gandhi during the Emergency period (Overview of Civil Society Organizations: India 2009) in 1975-77 when Gandhi seized political power, suspending elections, many civil rights, and the political power of many government offices. However, since economic liberalization in 1991, the total number of NGOs in India has skyrocketed (Kapur 2005): Today, the an average of 700 new NGOs have opened every day in India since 2008 (Sheth and Singhal 2011), including NGOs sponsored by the government itself (Gupta and Sharma 2006). Over 11,000 non-profit organizations are working in the Indian water sector alone. This pattern demonstrates that NGOs are especially pertinent today as they become a principal unit of governance and economic mechanism within neoliberalism (Trouillot et al. 2001; Schuller 2009).

In the long-standing debate surrounding the NGO, some have described NGOs as a particularly liberatory form of civic engagement, transforming new entrants of all strata of society into fully participating citizen-activists (World Bank 1997; Fisher 1997) and even offering a venue for critiquing and confronting dominant state and capitalist structures (Appadurai 2000; Magazine 2003; Aradhana Sharma 2011; Escobar 1992). Despite these possibilities, Harriss (2011) notes that the 'new politics' of NGO work is overwhelmingly constituted by the middle class and their class interests. Despite their ambiguous and often malleable politics (Lewis and Schuller 2017), all NGOs, whether neoliberalizing, a development alternative or a complicated amalgam of both, are predicated upon very particular notions of 'good,' which are then pursued entirely in service of rebuilding society in terms of that vision (Fisher 1997). Much like governments (Hacking 1990; Scott 1998;

Agrawal 2005; Roy 2007; Gupta 2012), NGO work is predicated upon very specific

accounting and visions – of a just future, of the interventions and acts of care needed to

achieve such a future, and the people through which a sense of justice is constructed. In

critical studies of development such as this dissertation, it is thus important to gauge how

'good' is defined, who it includes and how, and how it is operationalized into a program of

societal change. In this examination of the development work and ideologies which have

emerged from the tech sector, I address these questions chapter by chapter, showing how

senses of the good and the just are operationalized differently depending on one's place in

the larger chain of development brokers, from tech sector funders and humanitarians to those

who staff their trusts or who are meant to benefit from their development programs.

The institutions and processes of development that I discuss here are importantly

mediated by class. Many note that IT, its workers and its technology, have society in full

charismatic capture (Nair 1997; Nair 2005; Nisbett 2009; Mankekar 2011; Dasgupta 2015)

despite comprising only 2% of the Indian workforce. Seen as leaders of the new economy,

the values and interests of the IT sector are found to set the dominant notions of what it

means to be Indian in contemporary society (Radhakrishnan 2011). This dissertation

contributes to these discussions by examining the ways in which IT sector elites use their

class position (e.g. wealth, prestige, proximity to IT institutes, technical expertise) to enact

and influence beliefs and practices surrounding citizenship, development, justice, and,

sometimes, information and digital technologies.

This dissertation critically analyzes tech culture in a second way as well: In addition

to following the development patronage of tech actors, here I also critically examine the

moments and programs by which tech sector humanitarians advocate for the application of

digital technologies and the dissemination of information to achieve their development

visions.

Development interventions funded and overseen by tech sector actors often centralize

information dissemination and digital technologies as promising vehicles for development

achievement. In these cases, informational campaigns coming out of the tech sector for

development improvement not only assume the moniker of NGO work but embody the

increased importance placed on knowledge-sharing and transparency within digital age

development (Mazzarella 2006; Radhakrishnan 2007; Radhakrishnan 2011). Knowledge,

seen as "weightless and intangible," is offered as an all-inclusive and open resource for

development (see World Bank 1999). While knowledge platforms can disseminate helpful or

previously exclusive information, development by way of knowledge-sharing may also

reinforce existing power structures, or else – do nothing at all (Ranganathan 2010; Morozov

2011). Building on work that critically examines 'knowledge for development' discourse and

its programming (Radhakrishnan 2007; Mein 2009; Burrell 2012), this research asks: Why is

information considered an important development good?

Two-way new media technologies that permit communication in real time (e.g. the

Internet, mobile telephony) are altering the way people are political (Mossberger 2008;

Harper 2011). Elmer and colleagues note that political communication is increasingly

shifting to a strategy of "permanent campaigning" in which information is "retrieved, ranked,

and circulated – in short, made visible" in 24/7 live-feed (2012, 7). Digital objects such as

blog posts and tweets now orient the field of political communication, and through such

media those with digital access perform political communication and, thus, new forms of

informational citizenship (Elmer et al. 2012). It is important to acknowledge that Internet

access *is* rapidly expanding in India; however, at the time of this research, Internet

penetration in India was estimated to be between 10% (2011) and 18% (2014-15), as

estimated by InternetLiveStates.com, a website which compiles data from the UN, the World

Bank, and the International Telecommunication Union. These statistics portray a country

where, up until recently, only a nominal number of people have had regular Internet access,

The question thus remains: Why is *digital* information considered an important development

good?

      If social citizenship is defined as holding the right to live according to widely held

standards deemed proper and respectable as well as the status of fully belonging in society

(Marshall 1950; Isin 2002), many see digital technologies such as the Internet as facilitating

wider political engagement, namely for those making claims to appropriate conditions of

social citizenship (Cornfield and Anderson 2003; Mossberger 2008; Elmer et al. 2012; Borer

2012). While the Internet certainly *can* facilitate the increased political participation of those

who have access to digital technologies, it is important to ground claims of Internet potential

in existing practices and patterns. Mossberger et al. (2008) show, for instance, effective

Internet use requires not only access to appropriate hardware, a network of servers, and a

hookup to that network, but also basic computer and Internet navigation skills.

      Implicit in many discussions about the Internet or mobile phones as facilitators of

political engagement are deeper theories of the roles of digital information and the types of

literacies that are required in society and democracy. For example, popularly circulating

notions of the 'information society' and 'knowledge economy' arise from Castells' (2000)

formulation of a new stage of capitalism in which the production, circulation, and

manipulation of information will (or will have) become more significant than the production

and circulation of material goods. Knowledge is foundational in such a society, as it is only through exploiting knowledge and information as key resources that economic growth, development, and individual success can be achieved. Such ideas have fully integrated into public policy and academic discussions of digital technologies such as the Internet as an important enabler of citizenship in the digital era (Radhakrishnan 2007; Hand 2011; Burrell 2012). This is especially true in India where public planning policies have often privileged the tech sector and its entrepreneurs (Nair 2000; Heitzman 2004; Dasgupta 2015) and where the service sector of the economy is given much, often undue, credit for the high GDP (Gross Domestic Product) of the country in recent years. While the GDP is a figure that is not only commonly fantasized about, its fetishization further empowers neoliberal visions for India's future (Krishna 2015), and it is the high-technology sector which is commonly seen as intrinsic to that fetish and fantasy. In the discourses at the heart of these developments, information is seen as a key resource by which people can be productive, acquire economic skills, claim the rights and fulfill the responsibilities of changing conceptions of democratic citizenship, and acquire personal fulfillment.

Building upon literatures which have demonstrated digital technologies to offer new, albeit somewhat limited, avenues for fulfilling and making claims on social citizenship, I follow anthropological research that has noted the growing prevalence of schemes that seek to cultivate more digital users and, in the process, techno-informational subjects (Aneesh 2006; Ong 2005; Ranganathan 2012). While much of this work focuses on the state's enactment of technological and informational programs of social citizenship (Ong 2005; Radhakrishnan 2011; Roy 2007), this research offers an extended view of how such promotions of citizenship play out via private non-profit organizations, such as NGOs.

Many note the NGO to be a potent new form of moral intervention that is capable of shifting widely held moral standards and practices (Nguyen 2005; Rabinow 2005). Bolstered by the NGO, an institutional form which demands societal and moral re-imagining by design, as a vehicle to enter national politics as well as the technology and prestige of IT, the organizations included in this research work not at the level of material development, but, rather, on reforming what Taylor (2004) calls the "social imaginary." The social imaginary, in Taylor's conceptualization, refers to the widely imagined, normative moral order in society. Through their philanthropy and influences on public policy, the tech institutions studied here, be they companies or individuals, attempt to re-program social citizenship through re-imagining development and essential resources necessary for life, such as water. Therefore, it is imperative to analyze the campaigns by which the development initiatives coming from the tech sector attempt to rework widely held notions and practices of justice, citizenship (i.e. the social imaginary), nature, and information. This dissertation contributes that analytical work as it pertains to key examples at the interstices of high technology, development, and philanthropy in India.

Chapter Plan

This dissertation begins, with Chapter 1, by examining a water hackathon held in Bangalore in 2011. With a focus on the event's keynote speakers, all tech entrepreneurs, I analyze the particular moral idiom and forms of social capital at the root of tech sector celebrity that grants a number of tech entrepreneurs and institutions the sense of authority and entitlement to make large claims about – and to invoke systematic efforts to guide – national development, as they did throughout the water hackathon. I argue that tech celebrity

in India often constitutes a particular kind of political patron specific to the post-liberalization period in India that draws its authority from, like many patrons of past eras, acts of bestowing status inferiors with benefits derived from their extreme wealth and position. Patron-client relationships often come with the ascription of not only political but also distinctly moral authority to patrons; however, the extensive literature on patronage politics in South Asia is not enough to understand tech entrepreneurs and the particular moral tropes invoked as they attempt to patronize programs of national development. Rather, the patronage of tech celebrity figures in India must be understood, additionally, through the events and values of economic liberalization, for the wealth, status, and, thus, moral-political authority of prestigious tech figures not only have been created by liberalization's policies of economic restructuring but continue to be actively inflected through stories and values valorized within liberalization. Myth, in addition to economic capital, is key in these sociocultural configurations for several reasons. It contains a wide reservoir of cultural meaning which reflects the values of the contemporary social imaginary, and it offers a formula for self-presentation for wealthy tech actors that naturalizes their claims to national development and governance.

Chapter 2 steps back in scope to locate tech sector philanthropy and other influences among similar discourses and programs of development in India. In this comparative analysis, which relies on interviews with 30 different programs of development (techno)media, I first present an overview of the messy landscape of a development which works through the dissemination of information. The body of the chapter traces the emergence of not only a wide array of digitally moded development programs – public web portals, management dashboards, interactive resource maps – but also a political grammar

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which decentralizes the state as the proper manager of development change and works on reforming culture and subjecthood rather than in pursuit of external or material objectives. Within the sample studied, tech sector influences and connections emerge as a nearly ubiquitous presence, but one relationship, that of the donor, resound most strongly. As donors, tech actors ensure the propagation of not only newer political grammars that work on subjects and decenter the state but also techno-informational philosophies and programs of development.

Subsequently in the dissertation, I trace several benefits or goods patronized, intentionally and unintentionally, by several famed tech entrepreneurs or institutions in their attempts to not only influence national development but also programs of techno-informational citizenship as a key component within it. Chapters 3 and 4 turn to two different philanthropic organizations that are instances of tech sector patronage. These chapters each examine more closely programs of techno-informational citizenship as national development and the work of the development programs themselves. These two programs, like many philanthropic contributions made by tech companies and donors in India, are designed to intervene within the realms of knowledge, information, and (high) technology – a key emphasis of programs of techno-informational citizenship – rather than offering material interventions to problems of national development such as building water storage facilities, hospitals, or schools.

Chapter 3 follows the discourses surrounding knowledge and development in a policy planning commission, the National Knowledge Commission, which itself was a key performance that cast the ideals of techno-informational citizenship, through 10 years of one program's implementation, WaterWeb. In this chapter, I show that the continual – albeit

varied – centering of the expert and expert knowledge in a national knowledge initiative ultimately diminished the participation of non-specialist citizens and the general public in its activities, the very people who were meant to be the program's primary beneficiaries.

In Chapter 4, I examine the ways a tech corporation, Pearl, and its non-profit partners, Avaani, utilize exercises in visualization to cultivate water conservation in the neighborhood surrounding the corporation and in schools across India. I argue that while these activities could very well lead to greater water supply and stewardship in water-scarce areas, they also reveal new configurations of corporate power in the face of environmental crisis.

The programs that I discuss in Chapters 3 and 4 give a sense of how many aspects of philanthropic and development arrangements can differ from one another: While one, a national online knowledge portal on water, is an example of a national media initiative which was proposed by several tech entrepreneurs within a high-level government body and also later overseen by a private philanthropic trust associated with a prominent tech family, the second example is very much the opposite – a participative groundwater mapping and communications initiative sponsored and overseen by a large tech corporation that is designed to have a material impact on water levels within a highly local area of Bangalore. These examples further differentiate in the kinds of media selected for enacting social betterment or national development; while the initiative examined in Chapter 3 utilizes the Internet to disseminate information in a broad array of formats, those in Chapter 4 place an emphasis on extended personal relationships and visual representations.

The final substantive chapter, Chapter 5, takes a closer look at the everyday dynamics within one common vehicle of patronage for tech entrepreneur celebrities – the philanthropic trust. In this chapter, I show how the non-profit donor organization, as a workplace, and the

conditions of employment it offers are perhaps the first and most significant benefits

conferred unto status others by tech patronage. Relying upon and contributing to literature in

the anthropology of development, which has analyzed the labor of development workers and

which has argued for development practitioners to be considered as recipients of

development aid through the benefits associated with their jobs, I analyze how many

employees of one tech sector trust, which I call Jaldana, understand their work and workplace

as a special resource in which they can re-make life and subjectivity in ways they were

unable to do in previous, often corporate, employment. Though these are goods which are

perhaps unintended by the acts of patronage made by tech sectors as they seek to influence

national development, they are nonetheless important: Among the several programs of

national development and techno-informational citizenship I examined for this research, it is

employment, more so than the development programs themselves, that many interlocuters in

my research articulated as conferring the most salient and life-altering benefits.

Given the extensive investment by actors within and outside of the tech sector in

knowledge and technology as not only business-making goods but also as the commodity of

choice in ventures of national development, I address the following questions across the

whole dissertation: Why are knowledge, information, and high technologies valued as

development goods? Who participates in and is affected by development that operates

through information or knowledge sharing and the uses of new media technologies? What

claims to appropriate justice and social citizenship based on information dissemination are

made and enacted by IT sector funded development work? And what configurations of

power, new and old, take place through a form of development based on communication rather than material goods and resources?

I conclude the dissertation by offering a final discussion of patronage as it is embodied by high tech celebrities and their streams of funding in the post-liberalization period of India. Recognizing that the influence of tech patronage and their campaigns to direct the course of national development is often fettered by other voices and historical forces, it does not occur in a vacuum nor is it benign. Through books and public appearances, tech industrialists who I encountered in this research promote development philosophies based on economic liberalism and mass-technologization, and they often cast themselves as the mythic heroes who are capable of delivering such transformations. At times, these discourses are recirculated without question and establish an idiom of success that grants some tech figures access to tools of statecraft. Acts of discursive and political patronage creates key opportunities to make claims upon national development, but it is as economic patrons, through private philanthropy, which a few wealthy tech sector actors proliferate programs of techno-informational citizenship.

In the conclusion, I further draw out and articulate a theme that resounds across each chapter: elitism. If one definitive feature of patronage, historically a highly flexible institution, is the relationship between people of distinctly difference status often dependent upon the transfer of gifts or benefits from the wealthy downward, I argue that tech figures, in their attempts to patronage specific forms of national development and social citizenship, represent a patronage whose benefits do not travel far. Tech sector patronage is unlike many forms of privatized giving in India, such as *dān* and other acts of patronage, which often mobilize substantive benefits to non-elite class others such as food, money, and public goods

(even if such acts occur on an irregular or impulsive basis). Rather, tech patronage, particularly in the cases considered here, rather looks more akin to a vacant promise of neoliberalism as it has been repeated the world over in which elites are designated as the first beneficiaries of new economic policies with uplift for society overall promised to follow.

The Idiom and the Stage

Entrepreneurs from the high-technology sector have emerged as charismatic political authorities in the post-liberalization period in India. Positioned not only as economic but also distinctly moral leaders, notable tech entrepreneurs and the institutions associated with them draw upon the mystique of high technology created by economic liberalization as well as older idioms of political authority as they pursue programs of national development both privately and in association with the state. Following three such philanthropists, this chapter considers the development philanthropy of tech entrepreneurs as a form of patronage in the post-liberalization era and examines the varied idioms through which such figures derive and assert their political authority.

Throughout the three major sections of this chapter, I analyze the proceedings of a development event held in Bangalore in 2011, a water hackathon, and popular narratives that surround several prominent tech figures in India. My argument is as follows: While acting as patrons and philanthropists of national development in India, the tech entrepreneurs I discuss here rely on a particular idiom of political authority – one which presents them as national heroes with myth-like status. Through this particular idiom, they advance technocratic and neoliberal models of development. The charismatic political authority claimed by tech entrepreneur-patrons, which materializes as extended entanglements in government and other development institutions, is a distinctly post-liberalization phenomenon, for liberalization created many registers of capital (economic and cultural) which tech figures can call upon to uphold their status. Even though it is common for patrons to be ascribed heroic if not mythic attributes, the heroism of tech entrepreneur-celebrity figures is more historically particular. Enhanced through their humanitarian enterprises, tech heroism tracks according to the ideals

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valorized within economic liberalism. Finally, in the last section of the chapter, I analyze the plenary statements of two tech entrepreneurs at the water hackathon and thereby show how they advance models of development that not only centralize digital technologies as vectors of development but also make a series of political commitments and assumptions which foreground values intrinsic to neoliberalism.

Patronage and its Idioms

In much existing literature on South Asia, the patron has been exemplified by several common figures: agrarian landholders, temple donors, industrialists, "big men" who are remembered for their individualized and institutional acts of generosity, and politicians. The wide variety of patron figures to consider, as well as the ranging spectrum of what the patron gifts, when, and to whom, underscores the important point made by Anastasia Piliavsky and contributing authors (2014) that patronage can hardly be confined to a singular definition. It is rather more productively considered as an idiom, defined in part by a set of personalized acts of giving between status others. The motivations that guide patrons are similarly diverse: Patrons patronize to enrich themselves and their communities (Martin 2014); to secure a public reputation which will be remembered long after death (Rudner 1994; Dickey 2016); to win elections (Piliavsky 2014a); to fulfill religious duties (Heim 2004; Bornstein 2012); to confer care unto others as family (Bornstein 2012). Despite its varied configurations, at the heart of all patronage exchanges is the making of particularly salient and interdependent forms of political authority. In fact, as Piliavsky (2014) and contributing authors (see Mines 2014; Guha 2014; Björkman 2014; Berenschot 2014) discuss, patronage is often a *necessary* ingredient to some forms of political authority in South Asia. This chapter draws upon and

contributes to these discussions, foremost, by articulating and analyzing the idiom of patronage and political authority of a relatively new patron within South Asian politics: the tech entrepreneur.

The idiom is an important concept for patronage, for a too rigidly defined concept of patronage or patron risks leaving untouched (or mis-analyzed) significant gray areas where patron politics indeed seem to be operating. For instance, focusing on extremely high status patrons, such as agrarian landholders, industrialists, or politicians, might leave out the earliest manifestations of patronage for a given patron (Dickey 2016) or other social configurations (e.g. relationships, labor) which do the work of patronage. The essential role of fixers and their doings come to mind (Björkman 2014), which often is necessary for procuring land rights, tenancy, water connections, and advancing bureaucratic processes more generally – across classes. Patronage, rather than being defined by a small set of particular figures (e.g. zamindar, industrialist, etc.) or configurations, consists of *webs of relations* which are created and sustained by acts of moralized exchange.

Across instances of patronage, there is quite a bit of flexibility over what is given: In some cases, food is at the center of the exchange (feasts, provisions for the household such as rice, meals). Auspicious amounts of money or items are given for events such as marriage or to associational groups such as temples or caste associations. Water connections or permits are also given through patronage relationships (Anand 2017). Regardless, goods meant for wellbeing and uplift, often material, travel from patron to client whereas gestures of recognition and honor travel in the opposite direction, from client to patron. But these acts of giving are importantly understood among those who participate in them in acutely *moral –*

not merely transactional – terms, and regardless of the idiom, the patron's place in power is subject to highly specific, often reciprocal moral agreements with their constituencies.

It is thus important to emphasize that it is not the token of exchange that is valued most highly within the often intimate dynamics of a patron-client relationship. For instance, Piliavsky discusses how monetary gifts may indeed be respectfully given; however, if the receiver perceives the act as a gesture to buy loyalty or particular actions, then it will be rejected, scorned, or even destroyed and the relationship, unestablished (Piliavsky 2014a). Such dynamics highlight the importance of the *relationship* at the center of the patron-client dynamic. It is a relationship that is not only ongoing but is mutually constituted, as the power of patrons is subject to the acceptance and continued support of those who are patronized. For, as when language or any kind of material is exchanged, receivers always retain the power of rejection. Piliavsky further writes of politicians who, when seen as greedy ("hungry" and its vernacular equivalents are the terms often used), begin to lose the electoral support of their clients. This can lead to a reversal of political success entirely (Piliavsky 2014a).

No matter their diverse and ever-shifting forms, patronage relationships and gifts have consequences in the world. Patronage remains a significant organizing force within electoral politics, land reform and acquisition, various programs of development, and, on some occasions, individual instances of class mobility. Patronage, as an extended web of relations between class others, creates particular subject-positions. Patronage gestures are hardly insignificant, such as, in an example drawn from Dickey's ethnography on class in urban India, when a patron gifted a family a large sum of money which they used to cover last-minute dowry demands. In this example, without meeting last-minute dowry requests,

the whole marriage alliance, a significant source of class mobility for subsequent generations of the family, would have been called into question and possibly cancelled (2016). Such gifts also create substantial class mobility for the patrons themselves, for they can then utilize the accumulated social and moral capital of their patronage to facilitate electoral successes at higher political levels or to further fortify their position as "big men" and community provisioners. The cultural institution of patronage tends to generate programs and reoccurring acts of do-gooding and social improvement themselves. Though some programs function in name only, many are much more.

The patronage of tech entrepreneurs as well as that of their families and companies exemplify several well-known modes of patronage and also create novel improvisations to its form. Gifts or donations of patronage bestowed through networks of private philanthropy emerging from the tech sector can often have a "double semantics" in which they are legible as patronage politics on one hand, but also can be understood through the values and institutions of 21st century political liberalism as something quite different than patronage. While patronage, in political liberalism, is often interchangeable with urban middle-class discourses about corruption, lack of transparency, and "failed" governance, philanthropy, rather, can be seen as an effective if not noble mode of humanitarianism, branding, or business practice. These dynamics reflect the evolving form of patronage in a neoliberal and digital era and show the multiple frames through which such acts or modes of patronage can be read. Nonetheless, like other forms of patronage, tech sector philanthropy creates webs of enduring relations between status others, often based on reciprocal moral agreements between all parties. However, much of what makes Indian tech sector patrons unique is their thorough interdependence with ongoing processes of economic liberalization. Not only has

their capital (economic, social, and moral) largely been created by liberalization reforms, but their primary moral project – forging (or at least symbolizing) a thoroughly modernized India – is itself continually advanced through discourses and policies which further economic liberalization.

At the heart of these exchanges is the making of particularly salient and interdependent forms of political authority. In fact, as Piliavsky and contributing authors discuss, patronage is often a *necessary* ingredient to some forms of political authority. In this chapter, while analyzing a recently emergent idiom within patronage in South Asia – that of high-tech entrepreneurs who use their riches and prestige to initiate programs of national development – I further expand on these debates within the political anthropology of South Asia by explicating, first, the importance of mythic constructions of the high-tech patron's virtue to his political authority and, second, how recent historical events have fomented the very registers of capital which enable that authority.

The Patron

In late October 2011, a small group of computer programmers and development practitioners gathered in a conference room at a 4-star hotel in Bangalore. The festivities were not restricted to that time and place alone: Through Skype, esteemed keynote speakers were broadcasted from Washington D.C. and Delhi, and Bangalore's hackathon was held in congruence with similar events in nine other cities around the world. The occasion? The launch of a two-day global water hackathon sponsored by the World Bank and key partner institutions in each location. This event drew Bangalore into reference and imagination with people in Washington D.C., London, Cairo, Lima, Kampala, Nairobi, Tel Aviv, Lagos, and

Toronto where computer programmers were gathered along with World Bank officials and representatives from local non-profit organizations to "hack" solutions and tools for some of the world's most pressing water problems.

This was one of the first hackathons organized by the World Bank[6]. In the words of one of the Bangalore non-profit groups whose primary task was to organize the event, written on a blog which advertised the hackathon, "the Hackathon aims 'to seed a new community' that brings together software engineers and water experts to identify critical global challenges and project specific problems in order to develop software to respond to them." As became standard for similar events that would follow in the future, to "hack" in this scenario meant a number of things. It meant, first, to introduce youthful and accomplished technical talent to development problems and to design those professionals' relationship to development as one of concerned but productive – and technical – engagement. But for the World Bank and other development institutions, the hackathon offered opportunities to negotiate "opening" previously confidential datasets about topics relevant to development, as well as new ways of imagining the mobile phone, evermore quotidian across the world, as a vector for development inclusion, communication, and even aid. Hacking also thus represented the program's commitment to developing technological solutions to development problems, especially through the medium of the mobile phone.

Over the weekend, beanbag chairs and white boards were sprawled across hallways and large rooms normally reserved for instruction at the International Institute of Information Technology, Bangalore (IIIT-B). There, small groups of programmers (mostly college-aged engineering students) worked out ideas for mobile phone applications that they thought could

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[6] The 2011 hackathon followed the model of "Random Hacks of Kindness," then an annual hackathon co-organized by NASA, several big tech companies – Microsoft, Google, Yahoo!, HP – and the World Bank.

prove useful to the water sector. Globally, over 1000 people registered as hackers, and in

Bangalore, 20 teams of programmers participated. At the beginning of the event, each team

of hackers was given a small book of water problem statements[7], which was compiled by partner organizations at the respective location. The water problem statements proposed mobile phone applications that could be designed to

Image 1 (upper left): "Hackers" brainstorm the design for a grievance redressal mobile phone application. **Image 2 (upper right):** The entrance to IIIT-B, the location of the hackathon. **Image 3 (lower left):** The Water Hackathon photo backdrop wall with sponsor logos. **Image 4 (lower right):** A plaque in the entrance of IIIT-B states the mission of the institution, which seeks to uphold aspects of India's global stature through IT.

do anything from tracking water policies and encouraging water awareness or behavior

changes to facilitating toilet and water connection donations. Despite an array of suggested

water problems to consider, grievance redressal (usually conceived as leaky pipes) and public

toilet locators or trackers were the most common "water problems" tackled by the teams

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[7] The problem statements circulated at Bangalore's hackathon: 1. Monitoring and incentivizing use of community toilets in Indian cities; 2. Mobile phone as a policy watch application; 3. Awareness creation on water and sanitation issues; 4. Data repository and information dissemination; 5. Donate a toilet; donate a tap; 6. Inconsistent and unpredictable water supply to slums; 7. Locating and rating of public restrooms in Indian cities; 8. Customer complaint and redressal; 9. Policies beneficial to the citizen in her area; 10. Service delivery in the water and sanitation sector; 11. Status of applications for subsidy; 12. Water Lottery: linking water meters to mobile phones; 13. Water tankers in urban India: enhancing accountability and accessibility; 14. Using sport as a medium to advocate for behavior change (TechSangam 2011).

across hackathon locations. In this, the Bangalore event was no exception. Of the fifteen teams to present at the end of the hackathon, eight had designed grievance redressal apps, four had designed apps to locate or track toilets available for public use, and three others had designed water testing or measurement applications. Almost all of these applications were designed for the types of phones most hacker participants carried themselves: smartphones with Android capabilities.

Programmers were just one demographic present at the event; a number of others were also there. Most who were not considered programmers were referred to as "water experts," and were given a shirt that labeled them as such, making them easily identifiable to programming teams. "Water experts" were encouraged to mingle throughout the groups to lend their knowledge and experiences to programmers as they designed their apps. While event organizers had invited several people with extensive experience working on water issues so they could be available to consult with programming teams, many individuals threading through the event had little to no direct experience working on water. I recall sharing a moment of bewilderment with another attendee, a woman who had experience working in government in various capacities but never on water, when we were both suddenly publicly announced as water experts and asked by a hackathon organizer to circulate around the event to mentor the groups. Nonetheless, "experts," and their opinions, when offered to programming teams, were regarded with respect and often directed the planning of the apps. After two full days, teams presented their creations (still more like pitches and brainstorms at that point) to a committee of representatives from both the IT and water sectors. The awards committee, a mixture of individuals affiliated with prestigious government, corporate, and non-profit organizations, gave awards to the six most promising

mobile applications. Though hackers spoke of being motivated by the prospect of helping those less fortunate than themselves, promises of corporate-sponsored seed money, advancement in development-oriented tech competitions, and even government advising positions awaited those whose pitches were deemed worthy of award by the final committee.

Development-oriented hackathons have now become commonplace in Bangalore, and the perennially favorite themes of toilet tracking and grievance redressal are still commonly pitched as promising apps in development circles. In the several years since the hackathon, I heard news of only one application from the Bangalore water hackathon that went on for further development. It came to be called Caddisfly, after the water-borne order of moths. The app is a kit of technologies attachable to a smartphone that can produce a series of water quality tests more cheaply than commercial kits. While this technology went through years of development and prototyping, it is currently available only as a demo, though it now promises accurate testing of 22 water and soil quality parameters rather than the initial five parameters that its creators proposed to the water hackathon's awards committee in 2011.

More than the mobile phone applications that did or did not arise from the hackathon, the enduring implications for development and politics alike are found in an interrogation of the event itself. Take for instance, the people who were participating in the event and how they participated. Aside from the main sponsor of the hackathon, the World Bank, almost every role was reserved for people who had some affiliation with the tech sector: Tech entrepreneurs Sam Pitroda and Jeff Martin, who had achieved fame and wealth and who were then actively working on issues of national or international development either as private philanthropists or public servants, were selected to launch the event. The main participants

were software engineers who worked in some of the same companies (or aspired to) where

keynote speakers and tech entrepreneurs Martin and Pitroda, had forged their careers. And, a

piece that was not immediately visible to some, the "local" non-profit partner organizations.

These organizations contributed the water problem statements that directed hackers to

various development problems, organized much of the event, and also promoted and funded

the award-winning projects and they closely affiliated with a wealthy Bangalorean family

whose wealth is derived from the success of Infosys, an Indian IT firm. In other words, tech

sector entrepreneurs were positioned as both the dream at the heart of the event and also the

patrons who sponsored it, designed its proceedings, and dictated its terms.

Perhaps for a hackathon that was meant to procure primarily software engineers as its

participants and development-oriented mobile apps as its deliverables, such a lineup thick

with the ideals and resources of high technology is to be expected. However, the tech

entrepreneur-turned-humanitarians within that lineup boasted much more enduring profiles

than their appearance at the hackathon. Take Sam Pitroda, for instance, who referenced

working on water issues, among others, within the national government *since* the 1980s in his

plenary statements[8]. Jeff Martin, the second plenary speaker, described overseeing his own

small development institution, an NGO. His narrative described his ability to influence lives

at the sites of his organization's development projects, but also regular interactions with

high-level representatives of the development industry. Finally, the third and fourth of the

more famous tech figures present at the event were less visible, for they were present largely

through the attendance of non-profit organizations with which they were affiliated. One

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[8] Judging from his long placement in various cabinet-level government positions from which he has instigated numerous technology-centric development missions, Pitroda likely played a much larger role in making the event happen than his role as plenary speaker indicated.

individual, Nandan Nilekani, a co-founder of Infosys, sat on the board of one of the hackathon's local organizing partners. Nilekani was the same individual who had, through a series of events, brought about the formation of the second local hackathon partner, an organization that was ultimately staffed and funded by the philanthropic trust of, his wife, Rohini Nilekani. These several individuals represent enduring entanglements with political institutions and structures of governance: Formal appointments in government, direct contributions to national policymaking, seats on the boards of private development institutions, and the power to invoke development programs through private philanthropy. Using entanglements with formal modes of political authority, tech entrepreneurs patronize national development through events such as the water hackathon.

At the water hackathon, which I draw upon because it exemplifies the assortment of positions and means through which tech sector personalities act as political patrons, a mixture of Indian, non-resident Indian (NRI), and American tech entrepreneurs patronized the event in numerous ways. They called upon various resources (e.g. funding, social connections, prestige) across the institutional domains of the state, non-profit organizations, corporations, and the World Bank to lend both authority and resources to the hackathon. The organization funded by Rohini Nilekani had promised to provide startup money for the teams with the most promising mobile apps to develop prototypes, funding which lasted multiple years in some cases. In instances of rare talent, honorary and salaried positions within the Government of India (GoI) or the World Bank could be gained.

Ideologically, the tech entrepreneurs and the various development organizations they had founded represented and further encouraged "solving" development problems using technology. Indeed, the chosen format for the event – the hackathon – was embedded with

such assumptions. During a planning meeting in Delhi, a variety of organizers conceived the event as a 48-hour period during which teams would "hack solutions" to development problems. A write-up about the event after it had occurred described the hackathon as producing "applications that can literally put solutions in the palm of your hand." At the very least, patron-organizers hoped to "seed" a new community of engaged citizens, though that too was textured by the assumption that engaged citizens with technical know-how will perhaps generate the unconventional breakthroughs on problems where others, particularly development professionals, had failed. Tech sector representatives further authorized the hackathon morally as well: Not only could various sponsors and speakers be seen as professional role models, if not celebrities, for "hacker" participants, but Pitroda, then a high-ranking government official, also designated the event as both significant and morally imperative by his live Skype-in appearance. The patrons of the event further made the moral purity of their cause clear, for regardless of their affiliation to water issues, whether it be through private philanthropic organizations or public institutions, what they were contributing to – and what, indeed, was at stake over the course of the weekend – was national development itself. But as they advocated for particular forms of national development, they drew upon particular forms of capital to amplify their message.

The Patron's Capital

The water hackathon, in the composition of its participants and the values it asserted, was a full showing of the "New India." Event organizers had done what they could to, as some phrased it, "attract the best IT talent" to the event (My Thoughts on Bangalore's First Water Hackathon 2011), from the programmers who were to hack mobile phone solutions to

the more established figures in the tech industry who were to administer awards and deliver plenary addresses. Taken together, those present at the hackathon stood in as representatives for and indeed symbolized India's larger high-technology sector and, as such, the economic promise of a newly robust Indian economy. Spoken of as the hope and the leader of the 21st century Indian economy, India's high-technology sector is often established in stark contrast with decades of slow (2-3%) economic growth and the "New Indias" of the past – Nehru's planned agricultural and industrial economies and Indira Gandhi's liberal but often authoritarian policies of forced sterilizations and green revolution programs. These historical comparisons were at the forefront in the very construction of the hackathon, as the Bangalore manifestation of the event was conceived by local and World Bank organizers alike as a means by which the successful and ebullient portion of India's economy (high technologists) could repair the portions of India's economy which were broken (in this case, access to water and sanitation).

At the helm of this scene, as hackathon plenary speakers or sponsors and as successful entrepreneurs in the tech industry, were the figures of Sam Pitroda, Jeff Martin, and the Nilekani family. These individuals appeared at the hackathon not merely as emblems of corporate success but as publicly and privately sanctioned political operatives in charge of development policies and programs. As government officials or private philanthropists, tech entrepreneurs transform into proclaimed servants of the public and thereby gain access to and produce a web of political relations. But what do they do while occupying such positions of political power? What social relations are thereby produced? And how have professionals from the high-technology sector come to wield such political position and power to begin with?

I take these questions up here by contextualizing the participation of the several tech sector patrons present at the 2011 hackathon. In this section of the chapter, I briefly depart from the scene of the hackathon to analyze how Sam Pitroda, the Nilekanis, and Jeff Martin came into positions of moral-political authority designated by the stature of their roles, as plenary speakers and patrons, in the hackathon. Relying on narratives which describe the moral ascent of these individuals, I make two primary arguments: First, using the example of Sam Pitroda, I argue that tech entrepreneurs draw upon different forms of capital – wealth (economic capital), technical know-how and achievement (cultural capital), connections (social capital) – as well as the mystic allure of high technology, itself a kind of cultural capital, to establish themselves as moral authorities within the realm of national and international development. However, these deployments of capital are not made within a vacuum. Rather, and here is where my second argument comes into play, the prestige of Indian tech entrepreneurs – and indeed their particular brand of political authority – are made possible by and further privilege the ongoing project of economic liberalization.

Sam Pitroda and Mythic Capital

Sam Pitroda was one of the hackathon's featured speakers, and as such, he was scheduled as last in the night's program. As the hotel's video broadcasting equipment completed its connection to Pitroda and he was broadcast into the room, several people sitting near me smiled in recognition. They were familiar with Pitroda and had seen him speak previously. The emcee of the hackathon, a woman dressed in a fashionable sari who spoke with the highly Britishized English accent of the elite classes, introduced Sam Pitroda in terms which were, in comparison to her introductions of the other hackathon speakers,

uniquely emphatic. "*Mr. Pitroda, you need little introduction, but for those who don't know him or know enough of him, he's an internationally respected development thinker, he's a policymaker. He's often credited with laying the foundation for India's technology and telecommunications revolution in the 1980s. He's currently the advisor to the Prime Minister of India on Public Information Infrastructure and Innovations, and he's undertaken and currently undertaking the ambitious task of infrastructure in the country for enhancing governance and improving delivery of public services, which I'm sure will include water and sanitation. Thank you, sir, I'll move it on to you.*"

Sam Pitroda began his statement. It was brief, and it set up hackathon participants to think of their programming endeavors during the weekend in terms of national development. "*My involvement with water started in the mid-'80s when I did all of this work on rural [development]. … As we started not only discussing these issues, I realized that we know very little about some of the very basic questions. When I look at many of these issues, I realize that many of these issues still confront us. … In 20 years, in a sense, we have done a lot, and in a sense, we haven't accomplished a lot.*" His plenary statement, which I discuss in greater detail in the final section of this chapter, was a buffet of varied observations about water and suggestions for troubleshooting it as a problem confronting national development. Pitroda spoke of seeing hotel and conference rooms littered with water bottles as an indication not of pollution but of the classed nature of potable water access in India. (To this, many in the audience, holding plastic water bottles that had been made available at the event, snickered in self-irony.) Pitroda concluded his hackathon contributions by making general calls to curtail broader cultural practices that wasted water and for communities to mobilize to solve the water challenges facing them.

Sam Pitroda is a good place to start to peel back the layers of history and culture –

and the types of capital –that explain the moral and political authority that Indian tech sector

personalities often claim in their development patronage. He was one of the first of such

figures to emerge in association with national development projects. As such, several aspects

of his story of moral ascent have become idiomatic to a certain brand of humanitarianism that

one sees repeated by other tech figures in India. This brand is marked by a few

characteristics: Promoting digital technologies as solutions to pressing development

challenges, claiming credit for redesigning and implementing national infrastructures and

thereby influencing – improving – the daily life of most citizens, and utilizing a combination

of private non-profit organizations and formal government appointments to make these

claims. These technocratic achievements are often framed as both indicators of national

development and as nearly impossible feats of accomplishment. As government

functionaries, tech entrepreneurs such as Pitroda have framed their contributions as voluntary

by accepting symbolically low salaries (e.g., Rs 1 or $1 per year).

Together these features comprise a specialized genre of contemporary myth that has

not only established standards for the public persona of other patrons from the Indian tech

sector and further enables them to occupy subsequent positions of political power. Take, for

instance, several heroic stories advanced by Pitroda about himself. The first, from his

personal website (from the "About Sam Pitroda" page, accessed on August 27, 2018):

> *Mr. Sam Pitroda is an internationally respected telecom inventor,*
> *entrepreneur, development thinker, and policy maker who has spent 50 years*
> *in information and communications technology (ICT) and related global and*
> *national developments.*
>
> *Credited with having laid the foundation for India's telecommunications and*
> *technology revolution of the 1980s, Mr. Pitroda has been a leading*
> *campaigner to help bridge the global digital divide. During his tenure as*

Advisor to Prime Minister Rajiv Gandhi, Mr. Pitroda led six technology missions related to telecommunications, water, literacy, immunization, dairy production, and oil seeds. He was also the founder and first Chairman of India's Telecom Commission. In these plural roles, Mr. Pitroda helped revolutionize India's development philosophies and policies with a focus on access to technology as the key to social change.

As a way to induce the second phase of India's technology revolution, in 2005 Mr. Pitroda headed India's National Knowledge Commission (2005-2009), to provide a blueprint of reform for the knowledge-related institutions and infrastructure for the 21st century in the country.

Recently, Mr. Pitroda served as Advisor to the Prime Minister of India on Public Information Infrastructure and Innovation, with the rank of a Cabinet Minister. He served as the Chairman of the Smart Grid Task Force, as well as the committees to reform public broadcasting, modernize railways, deliver e-governance, and other developmental activities.

Mr. Pitroda is a Founding Chairman of five non-profit organizations including the India Food Bank, the Global Knowledge Initiative and the Institute of Transdisciplinary Health. He is also a founding Commissioner of the United Nations Broadband Commission for Digital Development and Chairman of the International Telecommunication Union's m-Powering Development Board that looks to empower developing countries with the use of mobile technology.

In addition, Mr. Pitroda is a serial entrepreneur having started several companies in the United States. He holds around 20 honorary PhD's, close to 100 worldwide patents[9], and has published five books and numerous papers and lectured widely all over the world. He lives in Chicago with his wife.

Pitroda emerged as a millionaire while working in the telecommunications industry in

the United States, though he is better known in India for his close relationship with Rajiv

Gandhi and instituting a national telephone network telecommunications work as a

consultant to the Government of India. Over the course of about 15 years in the 1980s and

2000s, Pitroda became somewhat of a fixture visionary of technocratic development within

the Congress Party as he served in official government posts in India. As Pitroda narrates

them (in his book, *Dreaming Big: My Journey to Connect India* (2015), and in public

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[9] Most notable was his invention of the electronic diary, a device for tracking appointments and sending reminders to its users (Pitroda 1975).

appearances), his main life accomplishments have little to do with his personal business

achievements but, rather, began the moment he returned to India. (Here I draw from a 2015

interview with Pitroda on "To the Point," a television show hosted by Karan Thapar, which

was which was broadcast on *India Today*:)

> Karan Thapar: Let's come to the incredible telecom revolution that you
> ushered in, because not only is that what you're famous for, but I also
> discovered that your book has a series of fascinating anecdotes about how that
> revolution happened. And the story began in 1980. You had just made your
> first million in America when you sold your shares at Westcom. You had
> come to India, you were staying at the Taj Hotel with your parents, and you
> looked out of the window and saw a strange procession. Carry on from there.
>
> SP: It was strange that the funeral was for dead phones. Because so many
> phones were dead in those days. I thought that was an interesting way to tell
> people that phones don't work here. I was intrigued. Then I tried to call my
> wife back to Chicago, and phones didn't work. I would say with a little bit of
> arrogance and a lot of ignorance, [I] said 'I would fix this.' If I would have
> known everything about India that I know today, I would have never tried it.
> Ignorance is a great asset.
>
> KT: But the thought that came to your mind is that I am a telecom expert.
> Someone needs to fix this. And I am the man who is going to do it.
>
> SP: Absolutely. I felt that this was my calling.

At the time, during the 1970s and early 1980s, phones were so rarely available (2 million

phones for 750 million people) that it was common for people to have to wait over ten years

for a phone to be installed even when they could afford the technology. Within this historical

context, as he further described his story to Thapar and in his book (Pitroda 2015), Pitroda

managed to initiate relationships with then Prime Minister Indira Gandhi and her son, Rajiv

Gandhi, who would also become prime minister. After a single presentation by Pitroda,

Prime Minister Indira Gandhi permitted Pitroda to create his own government center, the

Centre for the Development of Telematics (C-DOT), to build an electronics infrastructure

based on digital switches that established telecommunications services across the country. Pitroda's center, as he describes it, developed the technical plans for realizing telecommunications nationwide, and as a result, phones were placed densely throughout India – in *paan* dispensaries, pharmacies, and other small stores – where rural and urban citizens alike could access phone services for a 1 rupee fee. Because of his work, Pitroda suggests in the interview, *anyone* could access a phone in India and from which his public philanthropic career began; in other words, he says, by creating C-DOT he "connect[ed] every corner of India to the world." As the interview proceeds, Thapar reviews how Pitroda built a work culture at C-DOT that solved "uniquely Indian problems:" gender segregation, cultures of deference, and fragile self-image. Pitroda concludes the interview by discussing his relationships with Rajiv and Indira Gandhi and how the infrastructure built by his center was essential for subsequent achievements in India's telecommunications industry.

Three steps, in Pitroda's telling, were necessary for him to occupy his first government appointment, the position from which he "connected" India. In his autobiography as in his interview with Thapar, Pitroda describes that he was first guided by an insatiable impulse to fix India's telephones, an impulse which was unfettered by widespread cultural acceptance of bureaucratic bottlenecks and broken infrastructures (Pitroda 2015, 98-100). Second, Pitroda eventually acquired a meeting with the then governing family of India through a combination of personal referrals and the influence of a *Chicago Tribune* article[10] which highlighted Pitroda's business accomplishments (Pitroda

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[10] While there is an article featuring Pitroda in the *Chicago Tribune* around this time period, it does not appear to be one which highlights his business achievements. Rather, it is a human interest piece that details how Pitroda designed a binary digital card deck so that he could play cards with his son, who was uninterested in non-computer games. The article which Pitroda describes as helping procure a meeting with the Gandhis is neither in the *Chicago Tribune* archives nor in the media archive on Sam Pitroda's personal website.

2015, 102-104). The third and final step to Pitroda becoming a functionary of development within the central government was convincing Indira Gandhi herself. Pitroda's presentation hinged on technical details which were meant to demonstrate that he not only had a feasible plan for establishing nationwide telephony but also the skills to oversee such an undertaking. But there were additional factors which likely played a role in Indira Gandhi's acceptance of his plan, according to Pitroda: what he describes as an immediate personal bond with Rajiv Gandhi, who signaled to his mother that she should take Pitroda seriously, and the conviction that telecommunications development on the scale of the nation needed to be done indigenously (Pitroda 2015, 104-112).

Regardless of their accuracy[11], at the very least Pitroda's biographic tales depict key moments in which an individual associated with the high-technology sector could accumulate and convert different forms of capital and thereby achieve various resources that have enabled him to patronize national development in various public and private roles. I rely here on conceptions of capital advanced by Pierre Bourdieu wherein economic capital refers to financial resources, social capital to personal connections, and cultural capital to an array of skills, knowledge, experiences, and credentials (1986). While I was not present to witness (or research) the exact interactions of various forms of capital in Pitroda's political ascent, the stories he tells about it suggest that his ascent thoroughly depended on assertions of social

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[11] Comprised of heroic virtue, feats against all odds, and bringing the nearly supernatural boon of technology and development to society, these inflated narratives are distinctly mythological in their framing. As such, there is no singular original or urtext which holds the most correct version of the tale. Myths are stories that are told in many ways with great variations between retellings, though the events and relations which comprise their mythic structure remain intact. As Claude Levi-Strauss points out in his seminal paper, "The Structural Study of Myth," "the mythical value of the myth remains preserved, even through the worst translation…Its substance does not lie in its style, its original music, or its syntax, but in the story which it tells. It is language, functioning on an especially high level where meaning succeeds practically at "taking off" from the linguistic ground on which keeps it rolling" (1955).

capital. Through his father-in-law, a Nagar Brahman[12] and previous Indian Administrative

Service officer, Pitroda was connected to a parliamentarian who was also a maharaja. Pitroda

describes in his autobiography sitting with this man for days on end drinking gin and tonics

and meeting other high-ranking national politicians (Pitroda 2015). (Marriage is a key

moment of capital exchange and accumulation (Dickey 2016), and for Pitroda, it generated

connections to some of the nation's highest ranking politicians.) Pitroda also had relied on

connections with nationally respected scholars and educational institutions, such as the

Centre for Developing Societies, to gain momentum for his ideas. Finally, an article featuring

Pitroda as a successful businessperson encapsulated a moment when Pitroda acquired the

final amount of social capital (affiliation with the *Chicago Tribune* and its reputation) and

cultural capital (Pitroda's apparent technological and entrepreneurial skills, publicly

recognized) required to meet with the prime minister. Less explained in Pitroda's account of

these proceedings is the role of Pitroda's wealth (economic capital) – and the prestige it

generated – as he had recently become a millionaire through the sale of his business,

Westcom.

But another variant of capital, I argue, further mobilized the chain of events in

Pitroda's political ascent: the mythic allure of high technology, a kind of cultural capital that

is much more than simply the skills and credentials of a technical education. Through his

affiliation with successful high-tech ventures, in business and in government programs,

Pitroda casts himself as a cultural exception and, through that exceptionality, a national hero

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[12] Sam Pitroda, who openly refers to his caste heritage as belonging to the Vishwakarma caste, a low caste, is an exception to an industry otherwise dominated by Brahmans. On the basis of his caste, Pitroda describes himself as a self-made example of class and caste mobility who, though eligible, never took caste-based reservations (2015). Despite his caste background, Pitroda clearly has strategically called upon the social capital of his Brahman in-laws in pursuit of political influence.

who brings development in an era when the state was popularly seen as an impediment to development. To begin with, it was largely Pitroda's rare technical skills (cultural capital) – and the exceptional virtues of arrogance and ignorance, he reminds us – that enabled him, as he describes it, to "fix" telecommunications in India. And the mythic allure of high technology likely contributed to the Gandhis' decision to grant Pitroda state resources (e.g. position and name, centers, staff, and development "missions"), as well as the decisions of editors at publications such as the *Chicago Tribune* to deem Pitroda's personal life as newsworthy. Indeed, mythic capital plays an important role in subsequently propelling Pitroda's prolonged career as an agent of national development who is able to use the state as a resource for his ideological ends – and thus come to patronize programs such as the water hackathon of 2011.

Pitroda's heroic accounts can be considered mythic in their narrative construction: Pitroda casts himself as solely responsible for nearly superhuman feats which have brought boons – in the forms of technology and development – to all of society. Such narratives also at times showcase tech entrepreneurs as moral exemplars. For instance, Karan Thapar's televised interview with Sam Pitroda above offers a point-blank study in how exactly Pitroda thought, felt, and acted in very specific situations, which then resulted in consequential actions for his life and the nation.

Myths are stories whose subjects are granted divine or superhuman qualities (Eliade 1959), and the mythology surrounding IT is no exception, as Pitroda's account demonstrates. Sam Pitroda's creativity, self-confidence, and disregard for many Indian social norms, for instance, are granted a distinctly superhuman status. In his "To the Point" interview, Thapar

portrays Pitroda as Pitroda portrays himself: as the sole force behind India's telecommunications revolution (widespread access of first telephones and then mobile phones across the country), its software-led IT boom, as well as stark shifts of long-held cultural values and practices in Indian corporate and governmental culture. After introducing the telecom revolution – the events which made it possible for India to have over 900 million mobile phone subscribers – Thapar then sets Pitroda as its creator, "the very man who was the cause of that revolution, and to be honest, without [whom], it might have never happened." Further on in the interview, Thapar encourages Pitroda to recall how he ended customary cultural observances of hierarchy in C-DOT (e.g. he grabbed a woman by the shoulders and scolded her for standing up out of respect when he entered the room). Summarizing Pitroda's behavior as an accomplishment, Thapar remarks, "with one dramatic gesture, centuries of Indian deference ended with one go." Though Thapar does not critique Pitroda's literal (though ironic) use of force to bring about a more egalitarian work culture, what is important, rather, is the attribution Thapar grants to tech figures such as Pitroda: their trials are heroic; their personal qualities, superhuman (or, minimally, beyond the cultural and personal repertoires of most men); and their successes, glorious, in that they bring quotidian change to all. Indeed, Pitroda is largely given sole credit for accomplishments made in conjunction with political and fiscal patrons, partners, and those employed under him.

Like classic mythologies which are origin stories told in reference to specific realms or kingdoms, the heroic narratives that surround Pitroda too have a distinct geographical reference: the nation. Pitroda himself narrates his key technological contributions as achievements of *national development*, and that is how they are often received, as Thapar's interview and Pitroda's introduction at the water hackathon suggest. Granted, planning and

establishing technology that effectively gave hundreds of millions access to telephones in

several years is indeed a feat of national development; however, it was important for Pitroda

that this feat be accomplished in an expression of nationalistic fidelity. As he emphasized to

Prime Minister Indira Gandhi that "It [the achievement] must be *Indian*," and, further, "I was

a part of the brain drain. Now let me be a part of the brain gain" (Dubashi 1986). In this

moment of moral opportunity, it was important for Pitroda to cast his work as distinctly

Indian and in service of the nation, a line which he, an NRI who lives in Chicago, continues

to emphasize as he works on various development issues, many only tangentially related to

telecom[13].

Pitroda's mythology is not without the equivalent of a supernatural, world-saving

boon which he, as the hero, brings to society – development – but through the application of

information technologies. In Pitroda's government work and public appearances, Pitroda

extols the Internet and telecommunications technologies as the primary force that will bring

about national development and improve society overall. In his narratives, there is an

underlying ethos of breaking through governmental and tacit social regulations, of eschewing

Indian norms of respecting hierarchy and maintaining one's place within it, of adopting the

Westernized values of improvisation and self-confidence, and, above all, of using technology

for social improvement.

Whether as a moral exemplar or mythic hero, asserting himself as an aspirational

national figure has come with larger consequences for Pitroda and his image. For instance, in

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[13] As Sam Pitroda continued to serve in subsequent government roles, he almost always worked on programs of national development which had little to do with telecommunications, as his website biography generously lists: reforming public broadcasting, modernizing railways, developing policy plans and programming for healthcare and water access. He infused many of these reforms with recommendations for digitization, and he further set upon advocating for the transformation of India into a "knowledge society," which he frames as his contribution to India's second technology revolution.

addition to his various appointments to government committees and projects, Pitroda is

frequently called upon to make claims about the cultural psychology of Indianness itself[14].

Indeed, Pitroda admits that during his early trips to India while working on C-DOT he felt

that he was continuously presented with broken objects, attitudes, and cultural practices that

he compulsively attempted to fix (Pitroda 2015, 100). In a 2005 interview with Shekhar

Gupta on "Walk the Talk," the conversation quickly turns to diagnosing the imperative

failings of Indian psychology but with Pitroda held as an emblem of exception to that

psychology who can diagnose it and its antidotes, confidence, technology, and anti-

traditionalism. (Note how Thapar's interview with Pitroda covered similar themes by

reviewing how Pitroda solved the "uniquely Indian problems" of deference and low self-

esteem in the work culture of C-DOT.) What is at reference in these conversations is not

simply one man's biography or the founding of a revolutionizing technology or company, but

the moral and aspirational orientation of a whole country. These stories, which often center

on Pitroda's overall life course or key moments within it, are clear demonstrations not only

of key virtues or personal characteristics, but "a good life" and the telos, or ultimate outcome,

of moral action or virtue. As a moral and political figure of national relevance, Pitroda's

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[14] There is also a political, partyist overtone to Sam Pitroda's mythology, as well as a particularly complex narrative about indigeneity (meant as Indian national/ism in this case) and Westernization. Pitroda often speaks with a euphoric devotion to the Gandhis, saying in his interview with Thapar that when Rajiv Gandhi was assassinated, "I lost my life." When asked to share the stage at a recent technology conference with political opponents to the Gandhis' Congress Party, Hindu nationalists or members of the Bharatiya Janata Party (BJP), who are now in office, the tension is palpable.

       Pitroda also advocates for what he calls an "indigenous" development, by which he means that Indians, rather than foreign companies and expatriates, should play the largest role in making national improvements in the country. This rhetoric, an extension to one component of Independence-era activist discourse, is complicated by his own status as a highly Westernized NRI. Speaking English at all public appearances – even in Hindi media – and maintaining a residence in Chicago, Pitroda himself leads a life that complicates simple notions of Indian vs. foreign. The first question asked of him by interviewer Karan Thapar, addresses a foremost object of Pitroda's potential Westernization: his name. "How did Satyanarayan Gangaram Pitroda become Sam Pitroda?," Thapar asks. This is a question that digs deeply at Pitroda's simultaneous enthusiasm for indigenous Indian development and for what some might consider Westernized values.

stories also show how positions within government further fortify the mythic capital

available to him and, more generally, underwrite his moral authority: Position and

programming within the government enunciate the *national* domain of Pitroda's heroism and

allow Pitroda to make far more credible claims of development achievement than if he were

acting only through private entities such as NGOs or corporations.

This kind of mythic allure, here produced by the technology sector about itself, is not

only advanced by those at the center of such lore, but it is often deployed without question by

those who hear it. The water hackathon again offers good example: Note how the

hackathon's emcee regaled and contextualized Pitroda's participation with the very language

from Pitroda's website biography, introducing him as "an internationally respected

development thinker" and further crediting Pitroda with "laying the foundation for India's

technology and telecommunications revolution in the 1980s." Here, like other occasions of

public appearance, such as on Thapar's "To the Point," the heroic frames in which tech

figures describe their biographies are further circulated without question. The hackathon

emcee's jubilations were not merely a function of re-circulating biographical information

Pitroda had made readily available about himself, for she emphatically lauded Pitroda's

achievements as she closed the plenary program as well, "Obviously, Mr. [name omitted] is

speaking from government and the key role government can play, and Mr. Martin, his private

sector perspective from IT, but we have to thank Mr. Pitroda especially for bringing those

two things together and building the bridge between the future of information technology and

the important role government is going to play in doing this." Here, Pitroda received special

recognition not granted to the other plenary participants, including another high-ranking

Government of India (GoI) official, not only because of his affiliation with previous

achievements of technocratic national development but also, seemingly, because he has actualized a more permanent blending of tech heroism and governance, a conceptual and moral blend captured in what Simanti Dasgupta calls the "IT narrative" (2015, 4).

At the hackathon, the audience laughed warmly throughout Pitroda's statements. He was not purposefully making jokes, but his manner of speaking and indeed his suggestions for improving water access were idiosyncratic. Pitroda's final statement at the hackathon, an admonition of a widely observed cultural practice of offering guests a glass of water, summarized Pitroda's quirky style of thinking: "*We can't just go and offer a glass of water. Can you imagine how many glasses of water in the country are thrown away, everyday, day after day, because somebody shows up and, well, they need a glass of water? Is it really necessary? Do we really need to fill it up, the glass? It's a dumb idea – water is wasted everyday.*" After the event, Pitroda's words stuck around longer than other speakers, because people laughingly recalled aspects of his plenary statements. During the time reserved for mingling after the plenary speeches, one participant mimicked Pitroda by adopting a voice and stature that were meant to caricature him, "All these water bottles! All these glasses of water! Just stop with the glasses of water!" But these jokes were made with a measure of respect. The same group of people who made fun of Pitroda also exchanged stories of having met him, of respecting his achievements, or agreeing with much of Pitroda's development philosophy.

In many respects, Sam Pitroda's interactions with the Indian government have set a formula for the tech entrepreneur-hero turned national savior, which has been repeated by Nandan Nilekani more recently. The formula is this: By applying the rare character traits of

technical brilliance, creativity (or anti-normativity), arrogance, and adaptability, tech entrepreneurs bring the boon of technology to the masses. This heroic imaginary is indeed apparent in Sam Pitroda's discourse about himself, as well as in the language of those who interview and introduce him. It is also recognizable in the resumes that other technologists construct in their private philanthropy and public office, such as Nilekani's similar record, which has included sitting in cabinet-level positions within the government as he has made policy recommendations and overseen *Aadhaar*, the biometric identification and banking card which was made mandatory for India's 1.3 billion citizens in 2017 (also known as UIDAI, the Unique Identification Authority of India, the government department which was created to implement the project). In the early 2000s, Nilekani, along with his wife, Rohini Nilekani, established Adhar Trust, which they used to fund numerous city policies in Bangalore, including digitizing the records of police and water departments, constructing flyovers and other urban developments, designating an IT corridor and Special Economic Zones (SEZs) in the city, researching informal water use (or "water theft," as it was sometimes labeled), and overhauling taxation and bill payment systems across municipal departments. In addition to funding these broad initiatives, organized under the moniker of Bangalore Agenda Task Force (BATF), Nilekani also sat as chair of the initiative. Not only a textbook-like image of patronage, Nilekani's position and work with BATF also served him as he ran for public office in 2014: As stated in an interview published in *Business Today* on March 10th, 2014, Nilekani referenced his 5-year term as BATF Chairman as transporting him "into the nitty-gritty of local governance … I know every detail of how a city functions, so the fact that I have diverse experience, I'm a clean and local candidate. Therefore people should vote for me."

Nilekani's particular idiom of political and moral authority (and the features of his heroic myth) slightly differs from Pitroda's. More importantly, stories about Nilekani and the tech company he co-founded, Infosys, reveal, more concretely than those about Pitroda, how particular historical events – namely economic liberalization reforms and the broader cultural shifts those reforms generated – were essential in creating the reserves of capital (economic, social, and mythic) which tech entrepreneurs deploy as they advance programs of national development through the state or other private entities. I now turn to the heroic narratives surrounding Infosys, Nilenaki's company, to show how.

Infosys and a Hero for Liberalization

If IT entrepreneurs, their companies, and even their families extol themselves as moral exemplars who exemplify key virtues for living a "good life" and also the telos, or end goal, of what such a good life might look like, these moral demonstrations are not without context. Indeed, the tenure of tech entrepreneurs such as Pitroda and Infosys co-founders as patrons of national development is concretely entwined with the ongoing project of economic liberalization in India. It was liberalization reforms that assisted the creation of their wealth and, thus, their financial ability to assume patron status, but, perhaps more importantly, a lasting regime of economic liberalization has also solidified the cultural capital to which tech figures have unique access. The cultural and discursive developments which liberalization has brought about have shifted key conceptions of citizenship, nationalism, and moral virtue in contemporary India (Fernandes 2006; Lukose 2009; Mankekar 2011; Sud 2012; Dasgupta 2015), and it is within this cultural and historical context that the heroism of the tech sector establishes its meaning and acquires moral authority. By looking closely at what Lévi-Strauss

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has called "bundles of mythic relations" (1955) in the stories told about Infosys, it is apparent that the moral configurations exhibited by the high-technology sector portray economic liberalism as a right, natural, or golden order of the universe, making such stories hegemonic and rhetorically affective artifacts as they naturalize and glorify a neoliberal economic system.

Liberalization reforms[15] have been adopted in an ongoing process since the 1980s, though the most dramatic restructuring of the economy occurred in 1991 when a comprehensive package of reforms was passed by the Indian government. Faced with ballooning fiscal debts, an abysmal international credit rating, and dwindling certainty of economic agreements made with the recently-collapsed Soviet Union, India turned to the International Monetary Fund (IMF) for a borrowing package that posed some path toward fiscal stability. Not without conditions, the IMF demanded that India restructure its economy (Metcalf and Metcalf 2006). Thus, like many campaigns of economic liberalization around the world, the terms of India's restructuring were recommended by the IMF and were designed to loosen the state's regulation of India's economy. The passage of liberalization reforms, having largely failed under Rajiv Gandhi's administration in the 1980s, occurred as a compromise but included a suite of deep interventions, such as devaluing the Indian Rupee

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[15] The 1991 reforms aggressively encouraged foreign investment by allowing its entrance into numerous sectors, but moves by subsequent governments have continually raised the levels of foreign direct investment (FDI) permitted since. Though SEZs (Special Economic Zones) – spaces designated for industrial uses which are often exempt from many economic regulations, including many related to environmental and worker's rights protections – had existed in India since the 1960s, liberalization has overseen a rejuvenation of this concept and an increase in areas with this designation. Liberalization, many argue, is responsible for a stark increase of India's GDP, as well as increased economic prosperity and benefits all around (a less tenable argument). One thing liberalization reforms have surely accomplished, however, is the flooding of India with foreign money and economic goods. For example, the levels of FDI in India were about $100 million annually in India. After liberalization, this value grew exponentially with FDI values amounting to well over $50 billion annually at the time of this writing. These changes have reverberated culturally by creating the conditions that have allowed consumeristic modes citizenship to flourish (e.g. middle classes commonly utilizing acts of consumption as an expression of cultural status and identification) (Fernandes 2006; Dickey 2016).

and subjecting it to a market-determined exchange rate, severely reducing tariffs of imported goods (to encourage competition with what had been a previously domestic market of manufactured goods), simplifying permit and licensing processes for business (i.e. removing what was often called the "license" or "permit raj"), privatizing many companies which were previously state-owned, and generally reducing business-related taxes (Gupta and Sivaramakrishnan 2011). When neoliberalism, as a set of policies and broader cultural and economic shifts, is discussed in anthropology, it is often assumed to be characterized by the culling of social benefits and state services, the privatization of various industries, and increasingly flexible and insecure labor arrangements. While many of these shifts have certainly occurred in the wake of India's ongoing economic liberalization, these broad glosses do not capture the main tone of liberalization reforms, which were largely about "opening" the Indian economy to foreign corporations and products. Though this did eventually mean the divestment of the state from numerous, previously state-owned, industries, the state did not cut its budgets to its social welfare programs (Gupta and Sivaramakrishnan 2011). Further, as Gupta and contributing authors argue (2011), the word "reforms" do not capture the systemic restructuring economic liberalization has brought about, especially in the relationship between the Indian state and economy. Dismantling Nehru's pursuit of a planned economy buffered from foreign exploits, liberalization policies have favored industrial capitalists (above other segments of society, including other elites) and have brought private, often foreign, entities into sectors of society that had previously been overseen only by the Indian state.

The moral and economic ascent of many Indian tech entrepreneurs occurred precisely during this political context, so their stories (and prestige) are often set in contrast with the

regulatory environments and virtues that came before or because of liberalization. More overtly than the stories surrounding Sam Pitroda, who undertook the activities which would later constitute his heroic life narrative *before* any measures of liberalization were enacted, the example of Infosys offers a more overt demonstration of how economic liberalization has influenced the forms of capital accessed by tech entrepreneurs as they developed their roles as patrons of national development. Liberalization has created the structural conditions that have mediated both the economic and moral success of tech patrons such as Pitroda and Nilekani and companies such as Infosys.

Infosys organizes outsourcing services and produces software. Its software products manage inventories and secure confidential communications, such as online banking, for large companies. Infosys garnered some of their early reputation by building software that helped mitigate Y2K data glitches at the turn of the century. The start of all of this was in 1981 when, as Infosys's website reports, "N. R. Narayana Murthy and six engineers in Pune, India" started the company "with an initial capital of US$250" and acquired their first client (Infosys 2018). The historical landmarks that pace the story of Infosys, as noted by the company's timeline of milestones and as is recounted in television and print media (particularly books about business management), are largely business achievements: Infosys is credited with becoming the first Indian company listed on NASDAQ[16] (Ramesh 1999). Its founders often claim that when Infosys opened itself as a public company in 2003, it became the first Indian company to create many salaried millionaires, as co-founder Nilekani mentions in his book, *Imagining India: The Idea of a Renewed Nation* (Nilekani 2010) and Murthy in interviews (Hiscock 2008).

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[16] Infosys was actually the second Indian company to be listed on NASDAQ, behind another IT company, Cognizant, as Ramesh's article indicates, though it is often credited with being the first.

Infosys is credited with a popular allure that its portrayal in media representations make evident: *USA Today* published an article which stated that Infosys is "India's most admired company, and the outsourcing giant is the country's best-known brand in the global market" (Mahapatra 2006). Alam Srinivas, in his article[17] about the company (2003), alluded to its popular regard: "Mention Infosys, and we don't need to be told what's good about it. After all, Infosys has been voted as the "most respected company" and the "best to work for" by prestigious publications. It is perceived as a company that is honest, transparent and has the best practices in the sector."

By affiliation, the company's founders and subsequent management have come into their own celebrity status and are sometimes the focus of documentary attention where they further emphasize heroic narratives about the company. Consulted on the 25th anniversary of becoming a publicly tradeable company, former Infosys CFO Venkatraman Balakrishnan articulated what he recognizes to be some of the company's allure to the *Economic Times*, "It is a seminal event for the Indian corporate world...I think whole of India should celebrate this event because Infosys is not a normal company, it is an extraordinary company...[Infosys has been] a dream for many generations and it has catered to the middle-class aspirations in this country. I don't think we are going to see one more Infosys again because it has clearly set out a new form of capitalism where values came before profits...where the company legally and ethically generated wealth and distributed it across stakeholders. Even peons and drivers had become millionaires" (ET Now Bureau 2018).

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[17] Srinivas's article was an exposé that hinged on the claims that Infosys was becoming run-of-the-mill, stagnating, and, as a consequence, a boring place to work. The fact that this story line is worthy of reporting reveals a lot about the imagined promise ascribed to the company as a revolutionary force within Indian culture and economy.

Aside from the avid reporting that tracks the most recent dramas of the company[18], the story of Infosys's success is often described as one of measured achievement in the face of an insular, over-bureaucratized, domestic-facing government. As Narayan Murthy comments in interviews, such as in "India Inc.: The Story of Infosys," aired in 2005 by *NDTV*, in the 1980s, he describes that the Indian import regulations were so restricted that the company's founders worked from the U.S. initially. "When we founded it, the other six founders were in the U.S., because we had no infrastructure here. In those days, the friction to business was very high. I was the only person [of the founders] who stayed back in India. My job was to first get a license to import a computer, my job was to make sure we could send money to my colleagues from here. I would go and wait in the corridors of the Reserve Bank of India. I waited two years to get a telephone line, all of that." The narrator of the program goes on to describe how it took the group 12-14 months and 25-50 trips to Delhi to obtain the permits necessary to import one computer from the U.S. worth $1500. Nandan Nilekani has said in the same and other interviews that what made Infosys unique from other Indian companies at the time was that it had a vision to pursue a global market but using Indian talent: "The key thing was that we never looked at the Indian market as our market. And that was the difference. I think that if we had focused just on the Indian market as our market, we would have been far more distressed. But at the end of the day, we were looking at a global market. India was a base. We were going to use the Indian talent to solve these global problems." Infosys operated for nearly 10 years before the liberalization reforms of

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[18] In a given month, the Times of India features 40 or more stories which mention Infosys, and depending on the month, 20-50 articles focus primarily on the company or someone associated with it. While some of this is financial reporting about such topics as stock behavior, much coverage is about recent company drama. These stories range from fights among the board members and legal issues (e.g. sexual harassment, visa fraud) to the threat of stagnating company growth.

1991 enabled Infosys's success, as its founders claim in "India, Inc.". While Infosys had long partnered with a U.S.-based company to attract an international roster of clients, its founders recognize liberalization reforms to have given them the ability to grow – independently of the government, indigenously, and not as exiles in the U.S. – into a corporation of global stature (BBC News 2011).

A brief interlude: During my fieldwork, I rented a room in a household belonging to a family who I will call the Khans. My life with the Khans provided a refreshing contrast to the rest of my fieldwork, because during dinner or breakfast, I became a tangential part of a warm family that told stories about their pasts, funny and tragic, and debated current events, like the Charlie Hebdo attack in Paris, Modi's political policies and ascent, and a reputable Bangalore hospital found to be built on stolen land. These conversations were not only refreshing; they also contextualized discourses and stories I would come across in the everyday world of tech patronage. I bring up the Khans here to show how stories about Infosys circulate outside of hackathons, television broadcasts, and newspaper articles.

One Sunday, after coming home from a movie, I ran into Zubu. Only a couple years older than me, Zubu (short for Zubaieda) is the closest Khan family member to my age and also a person who I considered a good friend. During the week, Zubu worked long hours contracting out office spaces in Bangalore to corporate clients, but during the weekend, she often maintained a busy social program of going out with friends and family to parties, pubs, or movies. Zubu followed uplifting stories throughout the day on social media about people who bettered their environs, and she animatedly passed on these stories to others in the household on most evenings. On this particular day, Zubu was taking a break at home in

between her busy weekend activities when she told me about an inspiring story she'd

recently heard, as I wrote in my field notes:

> Zubu told me about an interesting program she'd heard on the radio. It was
> about a woman who'd grown up in a smaller town in Karnataka called Hubli
> (Hubballi). She was ahead of her time and would do things that other people
> in her village thought was radical. For instance, she decided that she wanted to
> cut her hair off, so one day, she just did it without thinking much of it.
> Apparently it was no small matter to everyone else though – it got to the point
> that when someone was driving through the village and asking for directions,
> people would say things like "at the house where the girl cut her hair off, go
> straight/left/right," etc. (Her act of cutting her hair off was spatialized and
> historicized as a landmark!) Then, when it came time for her to get married,
> she met someone who she wanted to be married to but who wasn't employed
> at the time. Her parents confronted her about this – how will you get married
> to someone who cannot support you? Z guesses that [the girl's] father was not
> working at the time, so a source of [financial] support was particularly
> important. The girl said, so long as one of us is working, it will be fine. Her
> parents reluctantly permitted the marriage, and it turned out that her husband
> was Narayana Murthy. (Founder of Infosys) (Field notes, 25 January 2015)

When Zubu shared this with me, she seemed to genuinely regard the story and its

message – to stay true to oneself even if everyone else regards it as strange or wrong – as

inspirational. This *in situ* mention of Infosys, though, was rather rare in my experience;

stories of Infosys or their founders, also mythic in their structure, tended to circulate much

more silently in popular culture. I would, for instance, see Nandan Nilekani and his co-author

Viral Shah at the Lal Bagh (Red Garden) giving a public interview about their then new book

about *Aadhaar*, *Rebooting India: Realizing a Billion Aspirations* (2015), or several copies of

the book would peer out from the wall of a café that I happened to be visiting. Or the

newspaper would run a story on philanthropic giving in India and mention names of Infosys

executives as top donors. Even among the members of social circles whom I encountered

because of the Khans, often elite[19] Muslim South Indians or its diaspora, Infosys was usually just another name of a well-known company. A place where peers might work, like Coca-Cola, PricewaterhouseCoopers, or the UN.

　　Even though Zubu's story centers around Sudha Murthy rather than her husband and his company, it retains several key features of the heroism which typify discourse about the Indian tech sector and further shows how such narratives become further circulated. It casts those associated with the tech sector, even family members, as radical and "ahead of [their] time" through their anti-traditionalism and strength of character. Moreover, Hubli, a substantial town though not a metropolis like Bangalore or Mumbai, is cast as a zone of tradition, a proxy for "old India," which does not sanction the progressive or independent mode of thinking and behaving observed by the woman, symbolic of "New India," at the center of the narrative. The story's reward, a marriage partner of the daughter's choice who became one of the wealthiest men in India, further reveals an important element of Indian tech sector mythology: its heroism is distinctly *economic*.

Here, I extend my previous argument (that tech sector stories are told as heroic myth, extol specific virtues and formulas for a good life, and thereby generate a unique form of capital available to those depicted as heroes) by further arguing that tech sector entrepreneurs forge an idiom of political and moral authority that is fundamentally economic in that it both privileges and is made possible by economic liberalization. In much of the heroic mythology of the Indian high-technology sector, technology, ironically, takes a backseat. The heroism of tech entrepreneurs is rather (and more importantly) measured by the scale of their economic

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[19] When I accompanied various members of the Khan family to social functions, I would commonly chat with people who had attended Ivy League schools, were executives of well-known corporations, or were associated with other prestigious figures or institutions. One woman I met while out with the Khans had worked with Oprah as a photographer.

successes – and their ability to bring that economic success to others such as the middle class or, as Balakrishnan described above, "peons and drivers." Frames which present tech sector stories as heroic myth also often present economic liberalization as a natural or right moral order. Such stories not only suggest modes of economic aspiring, normalization, and habitus for society at large, but they also further justify the tech entrepreneur as an individual who is qualified (morally, technically, socially) to oversee programs of national development in a liberalized economy. Narratives surrounding Infosys are not only mythic in their construction, but these are heroisms which were made possible by liberalization and which further act to hegemonically condone a neoliberal economic order.

Indian tech entrepreneurs and firms have a special relationship to liberalization reforms, as the arcs of their mythic biographies suggest: The tech sector was the first – or at least the most visible – business sector to take off in the post-liberalization era, which created a new generation of wealthy industrial capitalists. Recent lists of top philanthropists in India are one example of this, as an article published on January 9th, 2016 in *The Hindu* ("Premji most generous Indian, Mukesh ranks sixth") shows. Not only are the top five Indian philanthropists from the tech sector (three, co-founders of Infosys), but most of the others – on this and similar lists – were individuals who made their wealth in concert with the liberalized economy in such sectors as private real estate development and cable television. This list starkly contrasts with the few state-sanctioned industrialists, such as the Birla and Tata families, who became wealthy from building industrial empires first during the colonial era and then within India's planned economy, well before liberalization reforms. Liberalization-enabled business successes are what created the massive base of economic capital with which tech entrepreneurs such as the Nilekani family use to fund their private

philanthropy. (In 2014, when Nandan Nilekani ran for election to Parliament, he declared his wealth to be 7000 crore, or just above one billion dollars. A 2017 Forbes article, "India's 100 Richest 2017," estimated Nilekani's wealth to be about $1.7 billion.)

But extreme wealth also generates other tenors of status and prestige that contribute to the moral authority of tech entrepreneurs as they pursue humanitarian causes. Recall, for instance, how Sam Pitroda could use his wealth as a marker of status as well as his technical ability to gain the confidences of Prime Minister Indira Gandhi or the esteem of the *Chicago Tribune*. And this is where an attendance to the larger myth surrounding the tech sector becomes important, for liberalization has prompted deeper cultural shifts that have gone far beyond generating new pockets of economic wealth. Indeed, in the post-economic liberalization period, various forms of capital have shifted in value, privileging, for instance, consumerism and global mobility (Fernandes 2006; Dickey 2016). In these newly calibrated valuations of capital, the high technology sector continually exemplifies what is seen to be the most meritorious virtues of modern India (Subramanian 2015). As Smitha Radhakrishnan has shown in her study of women IT workers (2011), many who pursue aspirations of upward mobility through the Indian IT sector embrace an ideology that is defined against traditional and statist principles: prioritizing seemingly neutral reward systems based on merit (but not reservations for certain castes in education and government jobs); private sector jobs (but not jobs in the government); a free market economy (but not state regulation); professionalism (as opposed to politics, which are taken to be normatively corrupt); global (as opposed to parochial); efficiency (not bureaucracy); the virtue of hard work (as opposed to laziness and stagnation); individual growth (but not the suppression of the individual); and corporate management without unequal hierarchies (as opposed to

vertical hierarchies) (2011, 91). These are moral binaries that set individualism, challenge, and anti-traditionalism as the virtuous modes of being and nationalism in a liberalized economy, and they are exemplified by the Indian IT industry. In this respect, it is not only because of their industry successes (and the timing of those successes) that tech entrepreneurs and institutions have become poster children for "new" [liberalized, globally competitive] India, but they are seen to embody key cultural values that have acquired salience during the post-liberalization era. Stories that valorize the economic ascent of tech entrepreneurs as morally virtuous tales thereby become powerful discursive artifacts which confer legitimacy to the presiding neoliberal order.

The virtues of tech sector mythology – creativity, anti-normativity, technical genius, ignorance, individualism, anti-institutionalism, and anti-traditionalism – are usually portrayed as modes of thinking and acting that bring or are followed by significant economic reward, as Zubu's story about Sudha Murthy indirectly demonstrates. After sticking out a long youth in a town where her personal decisions were shunned, Murthy came into great wealth on her own terms – by marrying the man of her choice despite his seemingly lackluster economic prospects. (Though not included in the story heard by Zubu is the commonly known detail, broadcasted on the Infosys company website nonetheless, that it was Sudha Murthy who provided the initial capital required to start Infosys.) Abstractly, the virtues exemplified by Shudha Murthy or Infosys co-founders do not resist liberalization of the economy. Indeed, such virtues – individualism, anti-institutionalism, etc. – easily serve as mechanisms that foster acceptance of a neoliberal economy and the kinds of self re-making and coping that a liberalizing economy might require.

In the Infosys narratives, success is always told in reference to liberalization. Economic liberalization marks a crucial historical moment that shifts larger possibilities for the hero with pre-liberalization being a time of seemingly futile struggle and post-liberalization as a time of victory, reaping rewards, and wild success. In a presentation of Infosys's success story, co-founder K. Dinesh describes the company's early phase, "Getting a Foothold," as, referring to the pre-liberalization economy, "working with [the] shackles" of a "command and control economy, import restrictions, punitive taxes, under-developed capital markets, foreign exchange controls, capital shortage for infrastructure investments, [and] poor telecom infrastructure" (n.d.). By describing pre-liberalization as an era in which start-up businesses were "in shackles" and when under-development corresponded with government control, Dinesh casts the pre-liberalization order as irrational, unjust, and malfunctioning while suggesting that liberalization marks the dawn of economic rationality. Similar demarcations between "old" and "new" India are made within the radio program about Sudha Murthy in the story's stark contrasts between the traditionalism observed within Hubli and the vanguardism demonstrated by Murthy's teenage self. In such discourse, liberalization marks a distinct shift in the nature of the world and the kind of time that presides over it, making stories of the domestic Indian tech sector much more like proper origin myths, which tell of the beginning of time. As such, economic liberalization, in the hero mythology of the Indian tech sector, exemplified by Infosys at least, marks the dawn of a new, golden era for humanity (though, importantly, within the realm of the nation) – or what Mircea Eliade would describe in his theory of myth as the "irruption of the sacred into the world" which, according to the myth, does the work of establishing a new reality (Eliade 1959, 97).

In the heroic narratives of figures such as Infosys and Pitroda, a series of assumptions are advanced: that people *should* be able to start their own economic ventures and succeed, people *should* be able to communicate with one another using phones, that a company which pursues business "legally and ethically" will create millionaires out of "peons and drivers" – these designate larger moral fields that cast right relationships between individuals, the economy, and technology, as well as, more generally, the proper working of the world. If tech heroism is measured by economic success here, it is perhaps more importantly forged by overcoming the ultimate foe, governmental forces[20], which are presented within mythological tech narratives as wielding a great deal of power but exemplifying the mediocrity and arbitrariness of mortal humanity as it stymies right relationships. What distorts proper moral fields is governmental mis-action, and it is up to the technologist, as a distinctly economic hero, to correct the larger moral field for the rest of humanity.

But the supernatural boon brought to Indian society overall by high technologists is not so much technology as global economic accomplishment, as other accounts of Infosys's success indicate: According to CiteHR.com, a website that describes itself as a collection of "resources and advice shared by professionals over the years – information which can help you be successful in your business or as a professional," Infosys's success has changed not only the way the world sees India but also the possibilities for Indian businesses as well:

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[20] Sam Pitroda's story, too, hinges on encounters with the government, and he was working on C-DOT when Rajiv Gandhi passed the earliest liberalization reforms in the late 1980s. These policies lifted restrictions on firm sizes and simplified the licensing required for importing consumer goods and high-technology products (Metcalf and Metcalf 2006, 261). Although Pitroda has a special regard for Indian government given his reverent relationship with the Gandhis and his enshrinement in their administrations, even in his narrative, a large, inefficient bureaucracy was to blame for the failures of telecommunications development in India before his moment of intervention. As he describes his story, it was only because the government granted his center autonomy from government oversight, a kind of individually mandated liberalism, that it was successful. These "bundles of mythic relations," too, privilege economic liberalization, deregulation, and individual devotion to national good while they simultaneously cast government as inefficient, malfunctioning, and a hindrance to national development.

"Infosys Technologies is one of the few Indian companies that has changed the way the world looks at India…No longer is India a land of snake charmers and beggars. It is now perceived as an economic giant to reckon with, bursting with brilliant software engineers and ambitious entrepreneurs[21]. And Infosys is a symbol of India's information technology glory" (Iype n.d.).

A second example comes from Nilekani himself. Simanti Dasgupta describes in her ethnography an interview she conducted with Nilekani during which he "argued that the best evidence of the emergence of India as a "powerhouse" is visible when software engineers migrate to the West. He presented a particular vignette: "When my boys go to the U.S. to work on a client site, they go through the immigration process with pride because even the immigration officer knows that he is not there to work at a gas station or a convenience store. He is there because the U.S. needs him to program software for them"" (2015, 1). As these excerpts show, Infosys is commonly given credit for – or its representatives commonly make claims for – transforming India's reputation from a backwards country rife with superstition and tradition to a central economic player with cutting-edge talent and technology on a global stage no less.

The narratives above emphasize a particular relationship between India/ns, the world, and companies such as Infosys – namely that Infosys is responsible for bringing *Indian* talent into the world where it is *globally* competitive. This framing recasts liberalization as *opening Indian talent* to the world, where it can only stand to succeed, rather than the reverse, opening Indian markets to foreign corporations, interests, and commercial goods. (It also gestures to a vague time before, when Indian talent was previously suppressed in a domestic

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[21] During my fieldwork among philanthropic and CSR organizations associated with the tech sector, I regularly heard iterations of this phrase spoken in earnest.

market.) Ajantha Subramanian shows how similar narratives are at play in the seemingly autonomous (i.e. casteless and state-independent) merit of the IITs (2015). These discourses locate the true boon brought by the Indian tech sector not so much in acts which make technology widely accessible, but more so in a much more historically significant promise: that of *generally* de-peripheralizing India (and its moral standing) in the global economy.

But tech entrepreneurs do not only work to deliver the promises of technology, modernity, and economic de-peripheralization at the helm of their companies. They have graduated to comfortably working within positions in government or, self-appointed, in private philanthropy. Infosys co-founder Nilekani demonstrates this dynamic well, as he toggles between appointments with development projects in state and national governments (the BATF, National Knowledge Commission, UIDAI), Infosys (where the dominant narrative in the media suggests his role is to save the company from its most recent dramas or missteps), and various private foundations (EkStep). The Bangalore water hackathon was a demonstration of this as well with Pitroda set as a plenary speaker where he could confer authority to the event from the seat of a high-ranking government position and with non-profit organizations affiliated with the Nilekani family responsible for structuring much of the proceedings. Mythic narratives are key to these maneuvers, for they not only solidify the moral standing of tech sector figures such as Pitroda and Nilekani, but they also further contribute to positioning tech entrepreneurs as the proper agents (morally, intellectually, socially) to oversee national development.

Historical Continuities within Industrial Patronage and Technoscientific Nationalism

As tech entrepreneurs become increasingly central and authoritative figures within development, Kavita Philip notes that they are often framed, in scholarship and popular discourse, as if having suddenly appeared without warning; she says, "Indian geeks now appear as historical singularities, seemingly emerging out of nowhere to catapult the nation to the forefront of emerging economies in the new millennium" (Philip 2016). But these moral tropes are well-established historically within earlier iterations of industrial patronage and technoscientific nationalism. For instance, wealthy Indian industrialists, having demonstrated their ability to forge economic success within India and internationally, advanced policy plans for the economic future of the nation in anticipation of independence (Lokanathan 1945; Mukherjee 1976; Baru and Meghnad 2018). Such plans foreshadowed what would become institutionalized within the government as the Five-Year Plans for the national economy. The pursuits of Indian independence activist M. K. Gandhi, including his travels and ashram expenses, were funded by wealthy industrialist patrons (Payne 1969; Renold 1994), particularly G. D. Birla, an Indian industrialist who made millions from supplying jute for bags and other military supplies during World War I.

Science, technology, and institutions of knowledge production, too, have long been important domains for the articulation of nationalism in India. Industrial patrons have long directed their philanthropy toward creating institutions of knowledge production and higher education, especially since the late-19th century when the British Raj required charitable trusts to explicitly give to an abstract general public (Rudner 1994; Raianu 2017). Claims which promote industrialization and technical education as distinctly nationalist development, too, have been common since at least the same era, as Ross Bassett shows in

his historical study of Indian technical education (2016). One excerpt, from a speech given in Pune in 1884, in Bassett's study demonstrates this point well: The speaker, M. M. Kunte, extolling the importance of industrial skills and mechanization to his audience, said "For eradicating the undesirable and establishing the desirable in society, there is no option but to follow and spread widely the art of mechanization. If you want to eat, be a machinist. If you want to win freedom, you have to learn to be a machinist. If you want to live as luxuriously as our rulers, you have to run the machines. If you want this country to progress like that of England, all of you have to become blacksmiths" (2016, 1). As Bassett shows, discourses that centralize technological progress as the means to national development can be found in many segments of Indian society and steadily throughout contemporary history; even Gandhi's politics were defined by factory time discipline, the manual production of common goods, and the centralization of industrial machines such as the spinning wheel (not to mention, Bassett notes, a number of close disciples who went on to study at MIT) (2016). Declaring and pursuing achievement in science and technology cuts across widely differing nationalisms, from Nehruvian developmentalism to Hindutva (Geraci 2018).

Technoscience and Indian nationalism are not just random or occasional cohabitants throughout modern Indian history. Rather, as Gyan Prakash demonstrates in his study of nationalism from the late-colonial period to post-Independence, technoscience was a significant discursive and institutional plane in which Indian elites claimed political authority, including the very right to rule, called for the rejection of colonial powers, and established a distinctly Indian sense of modernity (1994). Both the British Raj and, later, Indian nationalist political administrations used science as an instrument of rule. For the British, science could be used to underscore the colonial Raj's civilizing imperative (its so-

stated mission to educate colonial subjects and thereby rationalize and secularize Indian society) and also to justify their position as all-knowing rulers of a lesser-knowing public (Prakash 1994) – even as the British Raj tightly controlled and limited the establishment of Indian scientific institutions and Indian access to positions of authority within scientific research and education (Kumar 2008; Geraci 2018; Malhotra 2019). But the British presentation of science, which they presented as magic, as Prakash argues (1994), opened space for many Indian elites to debase British political authority: Some drew histories of science to ancient Hindu societies and showed that science had rather been appropriated by the British from Hindustani sources rather than the other way around; some demonstrated the unscientific nature of the Raj's magical presentations of science. These critiques dislodged the political authority of science from British colonial power, and technoscience thereby became a potent symbol of Indian nationalism and modernity (Prakash 1994). Technoscience has been an enduring idiom of nationalism and national development which has characterized, albeit in different ways, the development rhetoric and planning of every ruling administration since Independence. The IITs, many founded just a few years after Independence, are a good example, but they also show how institutions of science and technology, even when created as a nationalistic gesture, (re)generate inequalities. Funded primarily by the Indian state (but also through contributions from the United States, Germany, and the Soviet Union), the IITs have educated mostly upper-caste men (Subramanian 2015; Philip 2016), and the expansion of higher education more generally during India's first few decades post-Independence were concessions made largely to middle-class demands for seats in universities and technical schools but at the expense of

investing in primary education (and the attendant benefits which come from it) for many more people (Fernandes 2006).

Similarly, and perhaps unsurprisingly, it is not uncommon for programs of industrial patronage to be entwined with traditions of technoscientific nationalism. In his work on the Tata business and philanthropy empire, Mircea Raianu has shown how Jamshetji Tata and his family developed a mode of what he calls "*swadeshi* philanthropy," a philanthropy that achieved tenants of sovereignty and nationalism but through the investment of private capital – a steel plant, hydroelectric dams, a scientific research institute, and several other endeavors (a company town, the Indian Institute of Science) which were controlled exclusively by the Tata company or trust, not the British Raj (2017). Distinctly cosmopolitan, Tata philanthropy broke from then-common traditions of giving to one's religious or ethnic community and was, rather, established to benefit the nation as a whole (Raianu 2017), a move which satisfied British limitations on charitable giving but, with its assertion of a distinctly sovereign, native claim to nation and science, simultaneously drew the ire of the highest ranking colonial officials (Kumar 2008; Raianu 2017).

Much of the heroic aura surrounding figures like Pitroda and Nilekani (and their development projects) derives from these historical precedents. What is new, rather, to the moral configurations of the patrons emerging from high technology, is economic liberalization and the way it inflects older moral tropes according to new values. Liberalization is the important piece to this story, for tech entrepreneur-patrons are not simply socially disembedded individuals who are economic and moral celebrities solely on the basis of merit. Rather, it was economic liberalization that made many of these individuals wealthy and their particular brand of cultural capital (as "serial entrepreneurs," as founders of

heroic companies, as specifically national heroes) valuable. These mythic stories of the

Indian tech sector are a key piece in hegemonies which promote the popular acceptance of

economic liberalization and, further, contribute to the moral authority tech sector

entrepreneurs call upon as they pursue national development.

Some have rightly argued that histories of technology (Philip 2016; Greenspan et al.

2016) and nationalism (Goswami 2004) cannot be told within a historiography that confines

itself to the bounded geographical frame of a nation, for the formation of such institutions

occurs in response to and in conversation with global processes and fluctuations. The

situation here is no different. Infosys co-founders toggled work between the U.S. and India as

they built a distinctly multinational corporation, which today operates nearly 200 offices in

dozens of countries. Pitroda's story is similarly geographically complex. The concept of a

leveling or "flattening" global economic playing field, popularized by Thomas Friedman in

his book, *The World is Flat*, was directly inspired by Nandan Nilekani as Nilekani and

Friedman conversed during a round of golf in Bangalore. Indeed, moral registers which

highly value Indian tech executives as visionaries of national development are inextricably

rooted in an *international* regard for India's telecommunications sector. The history I draw

above is not meant to belie these nodes and movements. If anything, I hope it emphasizes

how Pitroda and Nilekani choose to articulate themselves in distinctly nationalist terms.

A Third Patron

Back at the Bangalore water hackathon, the presence of a third patron unsettled the

nationalistic projects of Pitroda and the Nilekanis, figures who loomed large over the event

but whose mythic biographies went largely unspoken. However, Jeff Martin, an American

tech executive, actively used the hackathon's plenary to articulate his mythic lineage within

the field of high technology and, thereby, his rightful place within development in India.

I reproduce much of Martin's plenary speech, and his interactions with Sam Pitroda,

here. These extended quotations serve many purposes. They show not only how Martin's

self-presentation as a mythic and heroic exemplar of the high-tech industry legitimates him,

in his estimation, as a visionary and practitioner of international development, but they also

demonstrate the rather drastic discursive distance between him and the two figures I

discussed at length above, Pitroda and Nilekani. Martin's testimony offers an example of

what the mythic idiom of tech patronage might look like when it is not inflected through

Indian nationalism but, rather, American development philanthropy. The patronage of Indian

tech entrepreneurs and institutions is often placed alongside, as in the hackathon plenary, or

in interaction with similar but distinctly other development actors and agendas, such as that

of Jeff Martin; this section of the dissertation shows what those other developments may look

like. Finally, these words matter. They evidence, as the reader shall soon see, disturbing

neocolonial alliances which, in the name of development and with the use of digital

technologies, subjugate the poor to continuous tracking and monitoring, corporate

prospecting, and the attempted reshaping of the family and household. And at the hackathon,

these words, saturated in commitments to a technology-enabled and neoliberalized global

order of development, were spoken to motivate others to commence similar alliances, values,

and projects – and to call them development.

> When I think back over my career, I realize that I went to the best school, and
> that is the school of the world. I went to middle school in Africa in the late
> '70s, I traveled to South America on behalf of Carnegie Mellon's Media Lab,
> GATF, in the late '80s, and I traveled on behalf of Apple Computer to India in

the '90s through the millennium to launch things like the iMac, Think Different, and ultimately our entertainment products. And over the years of traveling around the world, I have been humbled by the intelligence that I see in other places. I've been in Silicon Valley for almost 21 years now, but I was always impressed with what I learned from my trips to India as well as my trips to other places in the world.

I remember when we launched the first Apple multimedia center to teach people about web design, digital music, digital video outside of Delhi in 1996, just before ThinkDifferent, we walked through one of the largest facilities of Apple computers, and each Apple computer had a swastika on top of the computer screen and the hard drive and almost red, chalk paint [vermilion]. That really showed me that with some of the most intelligent people in the world, tradition and good fortune go hand in hand. Later in that trip, I went to Jay-sel-meer [Jaisalmer] for the first time, the desert oasis town right near the Pakistani border. I was quite impressed by seeing cell towers right next to mosques, literally feet from mosques, maybe even a few meters, and realizing that convergence in many ways with old traditions of the world and new technology maybe even more than in the United States. And as I traveled in Mumbai, probably one of the most fascinating lessons I ever got on distribution networks outside of iTunes was the way these tiffins and these small canisters would distribute curry and lunches amongst millions of people everyday in Mumbai, and everyday people always got their food. And none of those people who distribute can necessarily read. It's all color-coded. And to this day, one of the great mysteries of humanity, I think, is how millions and millions of people are getting their lunch distributed through these jars with nothing more than a color-coded system. So India truly has some of the most innovative people in the world and also some of the great traditions of the world.

These words rang out in the small hotel conference room in Bangalore to launch the hackathon. Even though it was a Friday night, still about fifty people were scattered across the modestly sized conference room to participate. Those present were largely affiliated with tech professions, water non-profits, or educational institutions, and they listened patiently to the small plenary of speakers who were broadcasted from various locations. Jeff Martin, a past executive of Apple and then the director of his own mobile-based philanthropic initiative in Orissa (a state in Eastern India), was slated as the keynote for the plenary and Skyped in from Washington D.C. just before Pitroda.

Martin's professional record was more than enough to qualify him to speak on the plenary panel for the hackathon: Not only had he been an executive at Apple (who reported directly to Steve Jobs, he reminded us), but he had also founded the company which became the first to, as he explained, "actually drive over a billion dollars of revenue through cell phones." After all, Martin was there to represent the perspective of an IT sector professional, the hackathon's emcee told us. But Martin was also now a full-time humanitarian who utilized the mobile phone to, as he framed it, improve people's lives and help them empower themselves. Martin was thus, for the hackathon's organizers, an aspirational figure from multiple angles: a perfect mixture of one who had "made it" in the professional world of IT but also one who was actively pursuing development with the hackathon's technocratic values in mind.

Though presented more as a sales pitch than a personal reflection, Martin described how he became involved in development in India:

> mCommerce [buying/selling things using a mobile phone] is completely
> different [than buying/selling using a computer]. It's recognizing that what
> people value changes based on their location and the time of day. What they
> value in the morning is different from what they value in the afternoon when
> they go shopping. What they value when their kids are at school in terms of
> information differs from when they're at work, and in many ways,
> mCommerce by definition we're learning is how value changes for each
> individual every hour of the day, so with that understanding in looking that
> over – with over a billion people we serve in partnerships with 7 carriers
> around the world, we founded a foundation, charity called mPowering[22].
> Lower case m, uppercase P. The idea was to empower people to empower
> themselves. Or to multiply themselves through the cell phone itself as a means
> to give people an incentive system, a rewards system for changing behaviors
> that in many cases have been hundreds of years in the making. So Orissa was
> an area, region that we were introduced to by [an NGO, name omitted]

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[22] Martin's foundation, mPowering, is different from the m-Powering Development Board of the International Telecommunication Union for which Sam Pitroda serves as chairman.

schools and clinics there. And we thought, What a great test of reward systems. Not necessarily FourSquare in New York where we're rewarding you for using a restaurant. But what if we combine schools, clinics, and village commerce by threading the needle through cell phones given to some of the poorest of the poor, the ultra-poor, in Orissa? So here's how it works. When people go to school, they get points on the phone through the app. Those points are redeemed for food. In essence, they're being given an opportunity that morning when they wake up, 'Where am I going to walk today? I'm going to walk with my phone to school instead of having my kids work for the family business, I'm going to invest in multi-generational change by getting the reward of food for my kids to be dropped off at school. If I take my kids with me to the clinic, which is another walk I have to decide in the morning, I get points that can be redeemed for medicine or food.' They get to choose [between medicine or food] or even kerosene or even battery-powered refrigerators.

Martin's speech at the hackathon stood out markedly from the statements of Indian plenary figures, and Martin spoke with a different set of references for India, high technology, and development than what many in the hackathon's audience seemed to have. In the mythic biography he sketched for the audience, Martin assumed American entities as the epicenter of high-tech prestige and that the prestige associated with the monikers Silicon Valley, Apple and its various products, and Steve Jobs[23] would carry significance for those as the Bangalore hackathon. As such, he reminded us frequently of his close association with these entities. Martin also took care to thread laudatory (though patronizing) observations and memories of India throughout, casting India as a place of innovation and knowledge. The construction of his testimony shows that Martin also operates on a particular idiom of political authority but that one constructed on a very different set of cultural and historical references than the hackathon's other patrons.

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[23] Steve Jobs had died just earlier that month. Some hackathon organizers in Bangalore had made observances about it, though only in passing. Jobs and his death seem to have been much more lauded in the American tech scene from which Martin came.

Throughout his speech, Martin presented himself as an incredibly successful individual whose technical talents took him around the world and brought him into affiliation with what he cast as some of the world's most well-known corporate entities – Silicon Valley, his home; Steve Jobs, his boss; and Apple, his employer. Different forms of capital play various roles in the truncated biographical narrative Martin offered to explain how he came to be involved in development. The experiences he posited as his prerequisite to humanitarianism included high-profile positions within a well-known technology corporation, a record of achieving business milestones as a start-up founder, witness to "the world" but not necessarily through formal education, and proximity to pioneering IT products. Martin never mentioned being moved by poverty, any form of knowledge about it, or any particular objects of development intervention, but rather located his humanitarian inspiration in the suggestiveness of the mobile phone technology itself. Through "motivating" people to behave differently as consumers with mobile apps, as he frames it, he came to see the broad applications of mobile technologies for all of humanity, including its most vulnerable members, the "poorest of the poor," as he describes them. Success in business ventures, and namely his intimate knowledge of the mobile phone, he suggests, enable him to design successful development programs. Mobile analytics, he further asserted, made his and other technology-based development programs both more successful and more efficient than development programs formed under what he casted as older alliances of academic and governmental (or multilateral) institutions. The programs arranged under those outdated paradigms have to, as he later said, "wait, and no offense to Harvard, for ten years for a study come out" to evaluate their programs. Martin grounded his business experiences as moral achievements – indeed he seemed incapable of moral reasoning outside of the

corporate branding and marketing paradigms which characterized his speech. And though he does not mention it explicitly, the private wealth generated from his professional activities lent him another layer of prestige as well as important resources for his philanthropic ventures in Orissa.

Note how Martin suggests that his unique professional qualifications have enabled him to see profound, world-saving applications for the mobile phone are exclusively in the field of mCommerce. Martin is, as is Pitroda, a specialist in swelling the flows of capital and goods through mobile phone transactions – and little else. His development imaginary reflects this specialization, but the discourses of hackathon speakers in general naturalized the presence of people like Pitroda and Martin within national and international development, suggesting their professional specializations as providing the key missing piece to development progress. Not only do professionals and businesspeople in the field of high technology offer insight into the applications of digital technologies to development, but they also are seen to know how to change the subtle behaviors, values, and norms within society.

Martin's presence at the event, as well as his cumbersome stories about India, starkly contrast with the indigeneity so proclaimed in the discourses of Pitroda and Infosys co-founders and the extensions of Indian nationalism they frequently align themselves with. Through his association with American tech corporations, Martin had traveled quite frequently to India to market their products, making him familiar with India and some of its cultural institutions but hardly with the emic meanings which enliven them. Though a tech entrepreneur "doing development" in India using mobile phone technologies, Martin seemed to regard India merely as a place where Apple products could be sold, albeit an exotic place, and where development subjects could be found ("the poorest of the poor, the ultra-poor," as

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he referred to them). Indeed, Martin's appearance reminds not only that his presence likely retained different meanings for World Bank organizers than participants and organizers in Bangalore but also that the sense of indigeneity claimed by Pitroda and Nilekani, wedded to extreme wealth, is constructed explicitly alongside and in contrast to distinctly non-Indian actors and institutions[24]. Martin's discourse, with his references to corporations, NGOs, states, development banks, educational institutions, and development subject populations, further alludes to the highly layered institutional field that constitutes tech-inspired developments; I discuss these complex institutional linkages in the next chapter.

Figures such as Pitroda, Nilekani, and Martin are similar to other wealthy industrialists but not the same by any means, for they present themselves as the face of a new global economic elite of a new global capitalism. Their business achievements have not only generated a great deal of private economic wealth, but those achievements are often considered to be relevant prerequisites in the acquisition of boards seats for companies and non-profits alike, a juncture wherein economic capital and business achievement becomes translatable as moral virtue. But board seats are not the only path to converting economic capital into moral virtue, for high-technology executives such as Pitroda, Nilekani, and Martin have additionally achieved political influence for the way their business achievements have been inflected within culture and history as miraculous, moral, and heroic.

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[24] Both study organizations in which I conducted research most of this dissertation research, Jaldana and Pearl CSR, would frequently describe their work or identities in stark relief to international referents. Jaldana staff, for instance, would often point out that they were "the only Indian foundation" included in a meeting or consultation with the central government, indicating institutions such as UNICEF, WaterAID, USAid, or DIFD were peer-organizations and also declaring self-importance in their particularly indigenous pursuits of development. People working within Pearl's CSR, conversely, would rather reference the charitable programs they were operating in countries normally described as "developed," such as the United States.

The Patron's Gift

Acting in association with a variety of political institutions – the World Bank, the Government of India, private philanthropic organizations – several tech entrepreneurs had provided distinct resources to make the water hackathon in Bangalore possible and successful. To "attract the best IT talent into the room," the event promised multi-year financial packages, employment opportunities, and rather intimate exposure to several high-ranking tech personnel in Bangalore's IT scene, much like industry tech competitions. These offerings suggested that development might be the next industry to productively "disrupt" but also that it could also be a thematic arena which offered cash awards, salaries, and prestigious affiliations like other areas in the tech sector. Through social connections, ample space at IIIT-B was secured along with, for the launch, space at a luxury hotel. The live appearances of several tech figures gave the event prestige and authority. These resources, an assortment of economic, cultural, and social capital, were offered by tech entrepreneurs, their philanthropies, or their companies.

But the ultimate "gift" or outcome offered by these acts of patronage was much more than the piecemeal contributions, material and moral, to a single hackathon. These contributions rather established a stage on which the tech patrons present could gesture toward their real offering: the gift of development itself (or at least very particular visions of it). Though the program of the whole hackathon weekend proffered a stage from which tech sector patrons could facilitate their ideas about development programs, technologies, and engagement, the plenary program was particularly important in this regard, for it presented a demarcated and highly ritualized time and space within which patrons could establish the values, paradigms, and directives for the event. In this respect, the descriptions offered by

Martin about mPowering, his NGO in Orissa, during his plenary speech were more than just a ready example that related him to the hackathon; they were, rather, set as a model for how hackers at the hackathon might think about development and the applications for mobile phones within it.

Though the hackathon comprised countless conversations, exchanges, participants, and activities, I focus here especially on the plenary because of the way it reveals the values set for the hackathon by its patrons and organizers: As a communication event, the plenary program was unique within a weekend full of hackathon programs. For one thing, it was mediated by digital technologies, as most plenary speakers were broadcasted in from other locations via Skype. An emcee dressed in formal attire (sari) not only moderated the program of speakers, but she also formalized the event by providing introductions, jovial transitions in between speakers, and by guarding the barrier between the speakers and audience. Speakers, both those who were present in-person and those who Skyped in, were largely partitioned from the audience: They spoke or were broadcast from the front of the room to the people in the audience, who were seated and expected to listen quietly except for a brief question-and-answer (Q&A) period during which only two questions were addressed. Scheduled for the launch of the event at a luxury hotel, the messages of the speakers were meant to be broadcast to all hackathon participants and media presences. Aside from brief announcements of instruction and participant registration, the plenary program was the only occasion during the weekend when communication was so tightly controlled.

As a highly controlled and demarcated event, the plenary proceedings offer a space in which one can see what (and what kind of development) tech patrons advocate for as they occupy positions of political power, both on a macro scale, as executives and government

representatives, and on the more immediate scale as the honorary speakers in the hackathon

plenary. Further, the hackathon plenary constituted a rare moment of interface between

development patron and a public they sought to address, so the plenary program also offers a

glimpse into how tech entrepreneurs try to appeal to wider audiences as they cast themselves

as moral agents. Thus, in this final portion of the chapter, I examine the hackathon's plenary

program, particularly the speeches of Pitroda and Martin, as key performances in which

patrons from the global tech sector both articulated their definitions and philosophies of

development and sought to popularize those visions by appealing to various publics (in this

case, the hackathon audience). This portion of a chapter cuts across important themes which

span the whole dissertation – namely, what is the patron's gift? and who is it for? – questions

I will explore in a variety of contexts and for an array of actors in subsequent chapters.

Jeff Martin was designated as the keynote speaker and Sam Pitroda's appearance as a

special address for the water hackathon launch, but as a 3-hour event, their statements were

bracketed by other appearances as well. A collection of representatives from the government,

local partnering organizations, tech corporations, development NGOs using mobile phones in

their programming, and the World Bank preceded Pitroda and Martin who, as the stars of the

event, were given 30 minutes each to speak to the audience. These half-an-hour time slots

dwarfed most other contributions, which were usually limited to five minutes. Lengthier time

slots were also given to a representative of an international ICT4D (Information

Communication Technology for Development) non-profit organization who described a

project which had just started equipping development workers with smartphones to complete

sanitation surveys in the field (they received a 20-minute slot) and a Government of India

official who, in 15 minutes, reviewed statistics which summarized water and sanitation problems in India and called for broad community engagement in the issue ("[People] have been looking upon the government, but [we] cannot do this without public participation…The public must end up monitoring what the government is doing"). Though short, the contributions from World Bank representatives framed national development in India as inexorably linked to both the IT sector and the issues of water and sanitation. The first representative, then the Principal Regional Team Leader for the World Bank's Water and Sanitation Program in South Asia, made a call to mobilize explicitly those with IT skills in the room, whom he moralized as the people who embodied "where India is doing so well." Speaking from the podium at the front of the room, he called on technologists to "use your skills to help us solve this." Where this representative's statements were characterized by a tone of encouragement if not admiration, the next speaker, then the Director of the World Bank's Transport, Water and ICT Department, channeled a tone of shame as he Skyped to the Bangalore audience. "More people have access to SMS technology than toilets – how can you have such a huge IT [industry and infrastructure] with the worst sanitation in the world?," he said, prefacing claims about the gross loss of potential economic capital caused by water problems in India due to sanitation-related illnesses, lack of water, and time wasted to fetch water from faraway sources.

The World Bank representative quickly wrapped up his attempt to shame India as a nation to make way to the two most extended plenary presences, those of Jeff Martin and Sam Pitroda, who were able to make lengthy statements unadulterated by interruptions. After Martin introduced himself, his experiences in India, and his non-profit organization,

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mPowering (extensively quoted above), he revealed more about his philosophy of

development and the role of mobile phone technologies within it:

> So one of the exciting things about mPowering or any use of mobile to change
> behavior … is that we can see through mobile analytics where people are and
> what they do through the day. Not because we're spying on them, but because
> we want to reward them for the decisions they make that day with rewards
> they actually value, such as food and medicine and education. …
>
> We're at a time when people can really empower themselves, but that
> platform most likely will be a cell phone. And perhaps mobile apps represent
> the greatest single innovation in the history of mankind. … Let[ting] people
> vote by picking the apps that empower them to take control of their life is
> truly transformational. And it really represents a seachange in how
> organizations such as the World Bank can actually touch not just hundreds of
> people but billions of people. We know that you have better access to a cell
> phone signal today than, say, drinking water or toilets. And that's what brings
> us here today. It is very, very scary that as many of 2.6 billion people don't
> have access to safe drinking water. And when I look at how we change
> behaviors by encouraging people to have their kids go to school with
> mPowering and not work for their family business to find food, because their
> food will be given by taking their kids to school or getting their shots, I realize
> we can change almost any behavior. …
>
> So I challenge everyone in this hackathon to realize that what we're doing
> today isn't just writing a bunch of code that will go on a cell phone, but what
> we're doing today is that we're changing the world. We're changing the
> world, as we used to say many years ago at Apple, one person at a time, but
> one person at a time with a cell phone. And that allows us to think different -
> as an Apple person, I have to say that – and in a way we've never thought
> before.

Sam Pitroda was the next to speak. Pitroda's statement, approachable and off-the-cuff in its

tone where Martin's was hubristic and overly rehearsed, reminded the audience that what

was indeed at stake this weekend was national, not international, development. Citing goals

such as the eradication of guinea worm, providing water to 5,000 villages, and introducing

technologies such as satellite imagery and hydrogeological surveys to everyday water

management, Pitroda presented development as consisting of a series of actionable items

which could be completed, as if checked off a list, by government missions, such as those he

had participated in, or, more ideally, self-organized efforts made by citizens:

> The main difference that I see personally, between the mid-'80s and now, is
> that now I see a lot of plastic bottles around. At conferences, in hotels, in the
> markets. What it tells me is that the rich people have sorted out the water
> problem by designing a system that is expensive but it gives them whatever –
> drinking water, safe drinking water. But a lot of people in the water world tell
> me, [most] cannot afford it, and that's where the real challenge lies. In
> everything we do in India, the challenge is the bottom of the barrel. Top of the
> barrel has learned to solve their problems. They have the wherewithal, the
> resources, talent and money, and they come up with ideas like bottled water.
> But what do you do at the bottom of the barrel? Have we really addressed the
> challenge of billions? The millions and millions in India?...

Unlike most speakers, Pitroda made more claims about water than the usefulness of digital

technologies to resolve problems associated with it, and he centralized the plight of the poor

while doing so. He also cast his net wide, calling upon people to recognize the broad qualities

of water within cultural and economic institutions as they searched for ways to improve

water access nationally:

> I am not an expert on water, but water impacts all of us. It has many elements.
> It is difficult: it varies from a very personal level to national level to state,
> from technology [and] information—Water also defines communities, people,
> and nations. I was told that in many ways Yellow River defines China, and
> Ganga defines India. … Water is the most precious commodity: Undervalued.
> Overused. Hardly understood. We need to change that. … Water is good for
> business. There is an economy of water – as strong as any other economy.

During his speech, Pitroda recommended policy maneuvers such as more public-private

partnership arrangements and a National Innovation Council on water for which 20-30 water

experts would convene to propose a 10-year policy plan. Pitroda concluded by making a final

recommendation in the form of a quirky riff, disparaging (though in an inclusive way, using

"we"), on the wastefulness of one particular cultural tradition in India, that of offering guests

a glass of water:

> We can't just go and offer a glass of water. Can you imagine how many
> glasses of water in the country are thrown away, everyday, day after day,
> because somebody shows up and, well, they need a glass of water? Is it really
> necessary? Do we really need to fill it up, the glass? It's a dumb idea – water
> is wasted everyday. Can we change that tradition of ours? So you don't give
> water to a person unless they ask for it. Can we make sure all of the taps
> running in all of the country, in all of the world, are closed properly? Can we
> stop all of the leaks in our pipes? [These are] such simple, dumb ideas, [and]
> somehow it doesn't get done. [The Bangalore audience responded with loud
> laughter.]

After their initial statements, there was a brief Q&A period during which largely

Pitroda, rather than other plenary members, responded to audience questions. The topic that

the two men chose to pick up was the issue of corporate involvement in water and sanitation

issues. Martin quickly responded by posing that mobile-based development programs offer a

value proposition for corporations:

> We're seeing a trend with the same mobile analytics in mPowering to help
> companies like beverage companies and other large commercial organizations
> to have the same analytics to see that their impact with money in funding
> some of these initiatives not only makes the foundation more successful, but it
> also candidly, inclusively drives people to buy the brand. We are seeing more
> and more of that. In the parcel that I at least travel, governments are going to
> be less and less able to help with these challenges, and if we can find ways for
> these companies, like carriers, like automotive, beverage companies
> particularly, that we can show that when they make an attempt to help the
> world it's not just short-term, you know, what we call greenwashing. Recently
> there's been a lot of talk around pinkwashing and the challenges with the
> education and the way companies got together around breast cancer the last
> month. But we can actually show with the same analytics that got someone to
> use a sanitation opportunity with clean toilet can also prove that somebody,

believe it or not, had a halo effect and bought a Coke in a store. We can actually measure this location and show that impact. I don't think that can be a contradiction anymore. Again, if we're going to ask a lot of the world's large corporations to fund a lot of initiatives in the absence of government funds, we have to show that the investment they made is lasting and not just a fad and not just pinkwashing or greenwashing or other terms that are pejoratively used when brands don't focus long-term on a problem. Brands need to commit to water or female empowerment over the long term, you know ten years, and show that they're making a difference with the same analytics by now getting updates on the website, but we can also show that, because people have that a phone in other parts of the world in their pocket, as they go to a store, that a purchase has been made. We are focusing more and more on cause marketing to show that the two do not have to be in contradiction. We feel it's critical to reinvent cause marketing, so that brands don't make it superficial but that there's been an impact on sales – and they have to go together. And the good news about mobile technology is that the same people who travel the way to buy Coca-Cola in the supermarket are some of the same people who are encouraging people in Orissa to take their kids to school to redeem points for food.

Pitroda followed with a more ambivalent response which emphasized self-organizing among India's middle and lower classes:

These things require community commitment more so than corporate one. Corporates will do what they have to do. The corporate people have [indecipherable]--- They have more resources than--- They have more talent, they have--- I think they have to do their thing, but the community has to take responsibility. For water. And until the community takes up the challenge, I don't think it will make a big difference. It has to come from the village, not from outside. … At the bottom of the pyramid, nobody is paying attention. I mean, there's been a lot of discussion on beverage companies and how they use water and all, I'll leave that aside right now, but I think unless and until community takes responsibility for water, it's going to be very difficult. The community-level needs to play their part, not wait for somebody else to do it, and they haven't done it, and that's the main concern I have.

With Pitroda's final comment, the emcee thanked Martin and Pitroda for their contributions and then directed the audience to get out of their seats to form their hacking groups, consider the water problem statements, and mingle with one another.

The plenary program, including its lineup and the discourses apparent in Pitroda's and Martin's speeches, and indeed the whole construction of the hackathon were built on the premise that technologists have something unique to offer the array of institutions and actors working on inter/national development. Even as their speeches seemed to present two totally different discourses which happened to co-exist as a product of scheduling, there were still common commitments within the pronouncements of the two men. In their ambassadorship between the worlds of digital technologies and development, Pitroda and Martin advocated for the literal uses of information technologies in development settings, but their perspectives also revealed that the philosophies with which they approach development (and the application of technology therein) are deeply entangled in specific class and corporate interests. Comparing today's tech entrepreneurs to civil service ranks of the past, Philip has aptly summarized this simultaneous variety, contradiction, and commonality among tech entrepreneur developmentalism: "an emerging generation of IT entrepreneurs (with a quite different set of contradictory commitments) seems poised to supplant the civil service bureaucracy, promising efficiency and technological solutions for administrative problems" (2009, 73). I conclude the chapter by further detailing these two commitments below.

A new technocracy

IT executives have displaced earlier authorities of national development, namely development economists and, before that, colonial ethnographers (Philip 2016). As they venture into inter/national development, many tech patrons promote digital devices or services as the pathways to clean water, economic opportunity, or health (i.e. development).

At the hackathon, Martin exemplified this alignment with his vociferous advocacy for technological solutions, which were to be administered to "the poorest of the poor." Pitroda, conversely, was uncharacteristically silent on this matter and rather used his address to casually brainstorm potential improvements to water issues, however perplexing they may be. Pitroda's silence on the merits of technology in national development belied both the values inherent in the construction of the hackathon event and his own statements and actions elsewhere where he has advocated for high technologies as vectors of development (see Chapter 3).

But what follows from a development based on devices such as mobile phones? Martin's experiences here seem to speak to a model that is totalitarian, neocolonial, and consumerist, for end-users (or "beneficiaries"), and, for development practitioners, corporate-friendly but anti-state. Martin paradoxically describes mobile phones and applications as instruments that enable the control of the self and of life and thus empowerment while simultaneously advocating for a kind of development which constantly tracks its subjects' movements through space or their consumer habits. "Not because we're spying," he said, though, with its use of tacit information structures to track subjects without their knowledge, it is exactly like spying. In this way, such development programs carry over what some have recognized to be an implicit feature of the political economy of social media – the constant harvesting and sale of user's personal data (Vaidhyanathan 2018). Here, development institutions such as NGOs, like social media companies, stand to profit off of the extraction of personal data of development subjects, who likely do not have access to the very data they generate (I discuss this further in Chapter 2). Indeed, the cell phone, unlike other technologies or development objects, is what Martin repeatedly characterized as an "intimate

medium," which is one reason why he poised it to be so influential for development – it can be with people (and thus influence them) at any time of day and in any domain of life. This understanding of technology presumes that the cell phone, and a smartphone in particular, is a nearly permanent appendage of the body and that people such as Martin have the right to use the cell phone's ability to immediately transmit information for monitoring or manipulating development subjects so long as food, kerosene, or public health achievements are provided. This is, again, an affordance commonly assumed by social media and other tech corporations.

The feature of the cell phone to move money and goods has enabled Martin to both envision and subject real people to point-based incentive structures that can be utilized to obtain basic provisions. One imagines the logic of a consumer rewards card retrofitted to address major world issues such as malnutrition, so instead of a free flight, an extra massage, or discounted gasoline, one receives basic necessities such as food. Flipping the perspective around, the logic embedded in such programs prioritizes public health achievements but on the basis of the poor giving corporations and non-profit organizations instantaneous access to private details of their daily lives, information which can be used to manipulate them as consumers. Development programs such as Martin's mPowering utilize the mobile phone to transmit what they see as incentives for behaving differently, and here is where Martin's vision of development is almost militaristic, for through offering incentives, mobile phone applications – and those who design them – alter deeply engrained social customs and values, even the institutions of work and family.

Plenary speakers' comments about changing tradition echo increasingly common discourses within the international development industry about culture, which has become a

prime target for modification. According to such discourses, "traditional" culture – and the forces which comprise it, such as behaviors, attitudes, values, norms – is what often impedes socioeconomic progress and development projects. Here, Martin presents the mobile phone, somewhat conversely, as "empowering" people through breaking their habits and traditions. The kind of development espoused by Martin breaks down and re-engineers deep social institutions, and promotes "candidly, inclusively driv[ing] people to buy" whatever brand has made a financial contribution to the development program. In Martin's speech, he posited such systems as both effective and morally appropriate. In this way, new technologies such as the mobile phone can do what the tech industry does best, "disrupt" arenas of "traditionalism," but calling them empowering masks the ways applications of technologies in development, particularly according to Martin's model, render people both without agency and ready to be saved by new technologies (Achuthan 2011). Pitroda joined Martin in naming traditionalism as an obstacle to development, though he posed anti-normativity and self-organizing as its appropriate response.

Martin is hardly unique in his perspective. Many others could have taken his place in the plenary and proposed similar models for development. Indeed, during the audience discussion periods, multiple people, a World Bank representative and an NGO worker, advocated for the use of shame in sanitation projects. At another point, a representative of the World Bank's Water and Sanitation Program stood up to say "this is about behavior change, not impact." During my later research period in 2014-15, behavior change programs were quite common across private non-profit and governmental development programs.

Behavior change (i.e. social engineering) models were not the only models presented for mobile phone applications in development during the water hackathon launch. The GoI

official who spoke to the audience recommended a series of mobile applications which could be designed to, yes, incentivize certain sanitation behaviors, but also to monitor the government (budget allocations vs. expenditures, infrastructure progress), leaky infrastructures, and water quality. Water problem statements suggested that participants design, yes, both behavior change and awareness campaign mobile applications, but also applications that could facilitate the monitoring of water policies and the status of water service applications, act as a data repository, locate and rate public toilets, foster donations to install new taps or toilets where they might be needed, and make private water tankers more accessible and accountable. By far, the most common apps designed at the hackathon across all ten locations were toilet locators and trackers and, secondly, grievance redressal apps. Chapters 2, 3, and 4 are devoted to examining the logics contained within several new technocratic developments in more detail.

These models for development enact a new kind of technocracy that centralizes new technologists as the relevant experts for [inter]national development. It is based on an old idealism, the idea that widespread applications of technology will fix an array of complex social issues, as reflected in the descriptions at the hackathon of the cell phone as a device which could solve not only dire issues associated with water and sanitation but also transform humankind.

Liberalized development

Discourses that centralized mobile devices and tech professionals at the hackathon brought a set of additional commitments, assumptions, and values beyond the assertion of the technologies themselves. Martin's proclamations, for instance, do more than fetishize the

technology at hand, the cell phone, as the single greatest innovation of mankind. They also advance a startling philosophy of citizenship and governance, and one that Martin not only has put into action using mPowering (and the NGO as a governmental entity more generally) but is also further affirmed of its reality through his interactions with representatives of development institutions (the World Bank), corporations, and other "social entrepreneurs." The philosophy of citizenship and governance advanced by Martin is one in which social and economic behavior in society is reimagined as mediated by mobile phone applications. Even Martin's language, when discussing people's uses of mobile apps, is steeped in language normally reserved for citizenship – people "vote" by picking the apps that they choose, and the World Bank can reach constituencies of "not just hundreds of people but billions of people."

Across plenary participants, the speakers emphasized a downplayed role of the state in improving water and sanitation in India. The GoI representative called for the engagement of citizens who, he claimed, wrongly expected the government to be solely responsible for achieving sanitation and potable water access for citizens. Pitroda shared this perspective; indeed, he emphasized lackluster community engagement and broad expectations for water problems to be solved by the state or outside entities as "main concern." Martin claimed that governments were of diminishing importance worldwide as development actors, and, in the place of the state, corporations, NGOs, and development are now the primary brokers of development achievement. As such, Martin implicitly emphasized systems of private patronage rather than broader, rights-based development and its potential achievements. These suggestions were present in Martin's discussion of his own NGO: he did not talk so much about achieving the right to education in a broad sense but the geographically limited,

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sponsor-oriented statement of "kids go[ing] to school with mPowering." In this system, the rights of citizenship are sponsored by private patrons and thus should either visibly display the brands which funded it in the first place or covertly "nudge" people to consume the brand's products.

If Martin's contributions over-emphasized (and distorted) the relationship of corporations to development problems, Pitroda's downplayed that relationship altogether, re-phrasing the bottled water industry as a kind of activism or community organizing of the ultra-rich rather than a multi-billion dollar industry which takes advantage of broad fears of public water supply throughout all ranks of society. Even if Pitroda established himself in stark contrast to Martin by coming across as approachable – willing to engage with the audience through addressing their questions, accepting and affirming many of their suggestions, and admitting the limits of his own knowledge – Pitroda too disregarded government responsibilities to the issues of water and sanitation in favor of agency and self-organizing. In many ways, Pitroda presented the middle and upper classes as models of self-organization which he proposed should be adopted by those with more pressing water problems. The hackathon, by facilitating the engagement of tech professionals, promised to be one mode by which the middle and upper classes could further demonstrate their civic engagement in solving India's development problems. These values constitute another neoliberalized vision of development alongside Martin's conception of development (also liberalized) as many geographically disparate programs which are, in the vacuum of government funding, patronized by corporations who expect profits in return.

As many assert noble roles for digital technologies in development and the solution of India's most pressing problems, governmentality is shifting in notable ways. The state, which

has long asserted itself (and been widely seen as) the proper authority and manager of development in India, is diminishing as a political authority in the discourses of technology-centric civil society groups (see Chapter 2). In the Indian state's own pursuit of high-technology development programs, such as biometric identification, Itty Abraham and Ashish Rajadhyaksha have found that participation in such programs come with unplanned costs for the poor which are often prohibitory for their participation; in other cases, participation makes them visible to new economies which seek to monetize needed components of the programs (2015). A new technocracy that positions IT executives as development experts not only leads to their mythification within circles of governance and development, but it further contributes to broader cultural shifts of liberalization which diminish state authority.

Conclusion

Pitroda, Martin, and in a more indirect way, the Nilekani family used the hackathon as a stage to advance specific models of development and their particular mythic idioms of political authority. But many of the labors which made the hackathon were completed by individuals who altered or reinterpreted the ideas of the events funders and patrons. Similarly, the audience who remained quietly seated during the plenary statements and who spoke only when told to speak was filled with many individuals who, even if mostly from elite class backgrounds, could respond in a variety of ways to the proposals set before them. And they did.

Based on their questions during the few minutes reserved for Q&A, those in the audience showed themselves to be cogent and critical: A professor from an agricultural

college in Karnataka appealed for officials and programmers alike to consider water in agricultural contexts as a focus of the hackathon's applications and policy dialogues. A young Indian-American woman who had co-founded what she called a "social enterprise" firm to address issues of urban water supply in India asked the plenary speakers to reflect on corporate responses to water problems. A young man who identified himself as a software engineer and who spoke English with comfort criticized the plenary speakers' uncritical allusions to privatization and commercialization of water, a resource that he argued should be purely within the public domain.

Somewhere in the middle of Martin's monologue about "cause marketing," and preserved immaculately in my audio recording of the event's proceedings, one of the local event organizers who I had been sitting near muttered "I hate this guy" under her breath. At the time of the hackathon, she had just moved to Bangalore after finishing college in the U.S., where she had grown up. She was leading a project which sought to digitize, visualize, and make public as much data about water in India as possible. Later she co-founded her own non-profit which advocates for the use of accurate data and best practices of data management in governance. She thus did not likely take issue with Martin's proposal to utilize new technologies within the context and goals of development but, rather, his larger philosophy that seemed to prioritize large corporate entities and their profits. The organizer's utterance – "I hate this guy" – shows that Martin's values, though established as exemplary for the program, were not necessarily shared or equally valued among the audience, even its other organizers.

In another example, the young software engineer who took issue with the categorization of water as a commodity made use of the brief Q&A period to directly

challenge Pitroda on several of his comments, such as those which promoted public-private partnerships and which asserted water to be a commodity at the heart of a large economy. Though Pitroda did not accept the terms of the software engineer's question, he chose to respond to it directly. Ironically, this kind of interaction between citizens and government officials (or private patrons) are exactly what mobile-based grievance redressal apps undermine – the accountability made possible of face-to-face interactions (see Ranganathan 2012) – but the hackathon created several moments where such interactions were possible, even if only between the elites who were present.

Finally, the development problems which were posted around the room for hacker teams to consider were pre-conceived not by patrons from the tech sector themselves but by the employees who work for their non-profit organizations, as well as whoever those individuals had called upon for contributions. These statements are congealed manifestations of the many people who act as translators and brokers of high-tech patronage and its national development. Such actors exist in between the patron and those who are impacted by the patron's development apparatuses and texture the meanings and processes of development programs in significant ways.

But what is the gift given in these programs, intended or unintended? The various audience members I briefly discuss above, as well as their varied responses to the hackathon program and roles within it, demonstrate that there are many webs of relations created in the wake of the national development endeavors of Indian tech elites. Who are those who participate in the national development patronized by figures associated with the Indian tech sector? And how? The following chapters are devoted to analyzing these politics.

Political Transitions within Development (Techno)media

The assemblage of development (techno)media was on display at the 2011 Water

Hackathon in Bangalore. Tech entrepreneurs and the people they recruited to materialize

development, figures who were the focus of the previous chapter, were not the only ones

present in this scene. The sponsor bulletin (Image 1, below) on display at the hackathon

Image 1. The sponsor bulletin at the Bangalore Water Hackathon.

underscores this point well, for it shows that while tech institutions certainly played a key role in the event, comprising more than half of the event's sponsors, many other types of organizations (e.g. sanitation and water NGOs, government and government-like organizations, and international engineering firms) were equally present as well. Even so, the

hackathon previewed only small pieces and short refrains of the relationships which comprise

a much larger global assemblage in which a remarkable number of other actors, institutions,

agendas, and technological and media forms pursue (or are deployed to pursue) development.

This chapter is devoted to explicating this larger assemblage, some of its recent historical

shifts, and what the tech sector and its patronage are within it.

I present in this chapter a comparative analysis of thirty organizations and programs

which seek to make improvements to Indian society through the dissemination of information

or digital technologies, largely in the water sector (Figure 2, below, lists each program). The

initiatives, when taken together, present a seemingly limitless number of inclinations and formations, and, indeed, one aim of this chapter is simply to describe these initiatives and the larger assemblage of which they are part (see Appendix A for an extended summary of the programs). However, despite the diversity of the development communication programs included in the sample, the field of development (techno)media is also characterized by several highly ordered and consistent features. For this reason, I utilize the term "assemblage," with its double valance of referring to, on one hand, an emergence, movement, and transformation in between fixed states and categories (see Deleuze and Guattari 1987) and, on the other hand, the more stable, structural features of an otherwise transforming field or encounter (Marcus and Saka 2006). After detailing some of the diversity of development (techno)media programs included in the sample and the historical origins of that complexity, I devote the remainder of the chapter to calling attention to two distinct ordered features of the development (techno)media assemblage which have deep implications for its politics.

The first shift that I trace is in the ever-liberalizing discourses surrounding political authority within development (techno)media, which evidence a reordering of development politics over the last three decades. One part of this shift is that the state has significantly changed as a presence within the missions and identities of development (techno)media programs. Indeed, the older a program is, the more likely it is to recognize the Indian government as the proper and highest political authority within society whereas the newer programs are, the less likely they are to give the state such a central and authoritative role in their definitions of themselves, their goals, or their descriptions of development. Similarly, over time, one sees the transformation of the targets of development or societal improvement from external, largely material entities (e.g. building or installing infrastructures such as

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rainwater harvesting systems, cleaning up a river, impacting or changing governmental policies) to culture itself (e.g. influencing people's social beliefs and practices so that they behave or believe differently). While this transformation certainly does not fully swap structural development goals with working on culture and subjecthood (sometimes so-called "behavior change" is simply an added component to a program that also works on more material or structural targets), my analysis shows that approaches to development that specifically target culture are now an almost constant idiom of development (techno)media today. The bulk of this chapter focuses on demonstrating these shifts.

The second ordered feature of the development assemblage, which I highlight and which is important for the larger task of this dissertation, is that actors from the tech sector occupy a predictably privileged and empowered role within it. They are almost always funders, founders, or political patrons within this assemblage and, especially, of the state-decentered, culture-targeting development politics which now orients it. Indeed, within this sample and barring a couple of exceptions, tech entities have nearly exclusively funded initiatives that exemplify the new development politics, which decentralizes the role of the state and works to reform subjecthood.

The structure of this chapter follows the course of these arguments: I begin, first, with describing the assemblage of development (techno)media, some of its broad patterns, and the histories of development, politics, and technology which have influenced it. I then devote the majority of the chapter to showing how the political grammars embedded within development (techno)media initiatives have changed significantly over the last thirty years and thus signify deeper structural shifts within development politics. Finally, I trace the privileged and constitutive role tech patrons and entities play within this larger scene.

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Knowledge Portals

2005   A *national water knowledge portal* (news roundups and references, original feature articles, videos, photographs, datasets, data tools, research papers and manuals, questions and answers, a calendar of events – in English, Hindi, Kannada).

2006   A *national energy knowledge portal*, no longer operational (comprehensive, accessible guides to different aspects of energy sources and technologies written by academic specialists – in English).

2006   A *national environmental knowledge portal* (official statements, documents, peer-reviewed research papers, news articles – in English).

2008   A *national biodiversity knowledge portal* (geospatial maps with various ecological layers, message boards, topical groups, and detailed pages listed for different species – English).

2009   A *national climate change knowledge portal* (research articles, government-critical blogs – in English).

2009   A national geospatial water knowledge portal – in English only at the time of research but Hindi, Urdu, Bengali, Punjabi, Gujarati, Marathi, Odiya, Tamil, Telugu, Kannada, and Malayalam added in 2015).

2007   An *international set of portals on water, sanitation, health, and project finance and sustainability* (applicable/DIY information, development reports published as a Wiki – English, French, and Spanish at the time of research and Hindi and Malayalam added in 2015).

Project Management Software/Dashboards

2004   A *funding and program management dashboard* designed to distribute funding to water projects according to peer-review process conducted by experts and to facilitate better project/progress reporting and peer-to-peer water sector communication, once funded – English, Spanish.

2007   A *project management dashboard* designed for implementing organizations, who report and track project performance, and donors, who monitor their philanthropic investments in development projects – English.

Mobile Phone Platform

2008   A *streaming service for the mobile phone* (news, advertisements, user-uploaded messages (e.g. news, announcements, songs) – Hindi, Odia, Urdu, other local languages (within Jharkhand, Bihar, Orissa, MP, UP)).

Digital Resource Mapping

2012   An *interactive water map* (water quality and scarcity across India) – English.

2014   A *participative groundwater mapping project* in a Bangalore neighborhood – English.

Internet or Software Provisioning

2003   An *Internet and software provisioning organization* that organizes annual awards for ICT4D initiatives, "last mile" connectivity programs, digital resource centers, software for artisan design and marketing, website design for NGOs in South Asia and Africa – English and other languages as needed.

Film

2005   An *annual international water film festival* – English and other languages.

2009   A *video dissemination program* which trains farmers in India and Africa to adopt agricultural and hygiene practices determined by an international scientific committee – in local languages.

School Education Program

2010   A *competitive school project on environmental sustainability* for students of Class 4 through university across India – in English and Hindi.

(con't)

1983   An organization which focuses on river restoration and rainwater harvesting, *training programs on water and environmentalism for school children and journalists*, and activist campaigns. They also host an international research network on water – Hindi, English, other regional and local languages.

1999   An organization which offers *training in hydrogeology and managing groundwater and springs for citizens and development practitioners* – English, Hindi, Marathi, and other regional languages as needed.

2001   An organization working on water and sanitation in South Asia which has created a *training program for engineering students* (as well as an online water technology portal). The organization also conducts development projects and, within those, stakeholder mediations – English, regional, and local languages.

2005   An organization that focuses on installing, managing, and *training in wastewater recycling systems* in India and internationally – English, Tamil, Telugu, Kannada, Pashto, Nepali, and other languages as needed.

(Organizational) Networks

2000   A *network of water NGOs* in India (the organization which oversees it also as a liaison between the network and various levels of government by compiling policy recommendations, organizing national conferences, and mediating stakeholder dialogues – English, Hindi, regional and local languages as needed).

2007   A *research network on water conflicts* in India – English.

2007   A *network on rain-fed agricultural practices* in India – English, Hindi, regional and local languages.

Media

1992   An *environmental magazine* with print (since 1992) and online (since 1996) editions – in English.

1998   A *critical magazine and blog on dams and water management* in South Asia – English.

2004   A *critical blog on culture and politics* in South Asia – English primarily.

2008   A *website of investigative and citizen journalism on urban issues* within Bangalore – English, Kannada.

2009   A *positive news website* – English. Hindi.

2011   A consortium of *journalists trained in and dedicated to covering water, sanitation, and hygiene* issues across South Asia – English, Urdu, Tamil, Sinhala, Bangla.

Media Synthesis & Analysis

1982   A network which synthesizes and reports on *environmental information for the Government of India* – English.

Figure 2. *The programs analyzed here, organized by media format and year founded.*

Development Techno(media)

The Term

In this chapter I bring together a rather messy field which I call development (techno)media. It is a field wherein various media forms and, often, digital technologies are deployed with the intention to bring about development change or broad societal

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improvement. I coined this term to communicate the central place of media and technology within development while also emphasizing the contingent nature that the digital has within the programs studied here. Further, this term, development (techno)media, avoids grouping organizations within philosophies to which they do not subscribe, which would be inevitable with the use of more ready-made labels, such as Knowledge for Development (K4D) or ICT4D. Such labels not only designate the invocation of particular media, technological, or social forms in the pursuit of development, but they are also loaded with highly particular philosophies that only a few organizations in this study observe.

The term development (techno)media avoids this, but it does so even as it relies on the term "development," a highly charged label that some organizations acting within this sphere would contest. In a handful of cases, programs seek to contribute, broadly, to societal improvement but otherwise do not work formally within the apparatus of development (with its many NGOs, development banks, or projects) or towards goals that are explicitly defined in developmentalist terms. What is much more common across organizations, is that day-to-day operations of a given project are not described in terms of national development or developmentalism – indeed, such labels may be actively eschewed for the array of problematic assumptions which may come along with them – while the mission statements, goals, and historical trajectory of the same project are framed quite explicitly as a vehicle meant to achieve development. It is important to remember that the term "development" often contains these lived tensions and ambiguities.

Even so, these two conceptions of development – one which reifies it as an industry of institutions and capital that carry out the labors of development or, the other, which assumes development to be the achievement of an end-goal of wealth or wellbeing – are

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limited for the purposes of my discussion here. Rather, I wish to ground this discussion of development (and some of its (techno)media) in a more basic movement to which development is often directed, and that is to address the socioeconomic unevenness which is produced in capitalism. Often called "uneven development" itself, capitalist growth is based on the creation of ever-more inequalities through the dispossession of property, labor, and other resources (see Harvey 2005; Harvey 2019). These inequalities produce a series of economic, social, ecological, and spatial dislocations – a thorough unevenness – which permeate society. This unevenness manifests in an inconceivable variety of experiences but is captured by images such as that of millennial Mumbai (or many other cities around the world, for that matter) where high-rise luxury apartments tower over slum neighborhoods, of Bangalore where new IT campuses and residential layouts are being built in areas of acute water scarcity, or of the countryside of southwestern Madhya Pradesh where approximately 192 villages have (or will) become fully or partially submerged since the mid-1990s as the Sardar Sarovar Dam stills the Narmada River for a 214 km-long reservoir (to name them, Chikhalda, Dharamray, and Kakrana are several recently submerged villages). It is in relation to this unevenness that development – whether as industry, as foreign or philanthropic aid, as teleology, as nationalism, etc. – constructs itself. While some of the programs included in this research survey may not consider themselves development NGOs (i.e. conducting the typical labors and stations of the development industry) or actually achieving development (i.e. as some end-goal of wellbeing) through their projects, all of them were founded and continue to operate as a response to some component of the unevenness created by economic development.

Survey Methods

The survey research presented in this chapter is based on interviews with representatives of thirty organizations, all of which attempt to improve Indian society through the dissemination of information. Most organizations within the sample focus on water or sanitation, but the sample also contains examples of environmental media, digital development, and alternative news outlets. To gather data for this survey, I interviewed founders or managers about several areas of their programs: content formats and messaging, audiences and outreach, funding and organizational structure, and ideas and examples of success and impact. When available, I also reviewed annual reports. Interviewees did their best to condense complex, multi-year histories into one to three hours of conversation, but certainly details were occasionally missed, truncated, or even intentionally distorted[25]. Though the social context of an extended, one-on-one interview can be foreign in many ethnographic contexts, it seemed familiar and comfortable for all participants in this survey. Indeed, I often observed researchers and development workers making similar short visits to other organizations during which they would learn about another development program's operations. For some survey participants, our conversation seemed so commonplace that it was clear that much of the interview was the script of a pitch that had been given many times before. As a survey which relies on single interviews, it is important to emphasize that this component of the dissertation research offers an *overview*, not a detailed history or

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[25] As when, for instance, the staff of one program described their social media following as having grown organically, on its own. After the interview, another staff member described the extensive training the organization had received – and paid quite a bit of money for – to grow their following.

ethnographic account, of development (techno)media as it applies to water in contemporary India.

Ultimately, the survey included interviews from thirty organizations, but many more (95) were considered for inclusion. To compile the list of survey candidates, I received initial inputs from the staff members of Jaldana, a case study organization within this research that is also embedded in the field of development (techno)media. I further solicited suggestions for relevant organizations among survey interviewees, academic advisors, and Internet search engines. Once my list of potential participants reached 95 organizations, this process ceased to yield new results. This list of organizations was, in some ways, an overshot of the larger field, for it become so broad that it contained entities that didn't seem to share much with the web platforms around which the original inquiry had started and included projects that no longer existed or which seemed to be untraceable through my search efforts, whether on the Internet (no website, no contact, no email) or through personal contacts (including a purportedly national network of development practitioners which had agreed to host me during the period of my research). In some cases, a much advertised platform was not much more than the webpage which had initially announced it, or a video series project amounted to the initial "drop" of five videos rather than an ongoing effort. But also I noticed, especially after completing a year of fieldwork, that this list contained several silences. It did not contain any organizations that specialize in the labor of cultural brokerage, labor that transforms the language and agendas of development funders into implementable programs that are legible to the subjects and populations they are intended for. Though such organizations are often charged with completing the many different tasks required of implementing a development project, much of their work is communicative. They must be,

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above all, linguistic brokers, translating development projects into locally relevant language. The list featured other silences as well. It did not contain many development organizations (or advertising agencies) that specialize in concentrated development media campaigns that are carried out using an array of media forms (e.g. children's books, videos, posters, etc.), though I did speak with several such organizations for my research outside of this comparative survey. And while several programs on the list could pitch themselves as ICT4D, the list, with its much more consistent emphasis on media and education, was hardly a compilation of ICT4D projects. The list rather brought together a middle core of programs that utilize media, digital technologies, and older approaches within grassroots or implementing development organizations.

Silences and irrelevancies aside, I contacted 73 programs for inclusion in the survey and ultimately included programs which (1) represented the range of media and technological forms within programs of development (techno)media, (2) represented sustained campaigns or programs, and (3) responded (not all did) and were available during the timeframe of the research. I excluded organizations that seemed to be too broad, such as the World Bank, UNICEF India, several large educational institutions, development NGOs which had no visible knowledge or media component outside of their day-to-day communications or reporting cycles, and a popular television show. Also excluded were one-off projects which either seemed to consist mostly of promotion or were never developed beyond a handful of media pieces. However, accounting for the range of media and technological forms within development (techno)media meant variegating the sample to the detriment of one category, web portals, which still contends for the largest category in the sample. The portals within the study clearly position themselves as working within the field of national or international

development whereas the 13 excluded portals are much more varied: they have fewer associations with state and multi-lateral agencies, many were founded to support hobby-based interests or commercial enterprises and transactions (e.g. acquiring a job, finding a flat, selling goods, finding contracting firms and supplies for infrastructure projects, agricultural techniques and market information), though a few were founded with broad, idealistic social mandates. With all of these considerations taken together, the survey sample balances these varying media formats and dissemination modes and thus brings out the variety inherent to the field of development (techno)media.

Programs Surveyed

Media Forms and Services

  The programs which are included in the survey usually circulate information through various media (e.g. published articles, guides, maps, videos), but, alternatively, they may focus on either provisioning information technologies or software (i.e. informational infrastructures) or the social labors that underlie information sharing, such as coordinating a larger social network of researchers or organizations. To simplify the task of introducing such a diverse collection of programs, I sorted them in eleven groups, according to their media or dissemination formats (see Figure 2 as well). (1) **Knowledge portals** (see Chapter 3 for an analysis of one knowledge portal) are often put to the encyclopedic aspirations of making information or datasets about a given topic comprehensively and publicly available on the Internet. Though they usually contain expansive archives of information in many different media formats (e.g. text, video, graphic, etc.), the staff which manage them often curtail their expansiveness by committing to particular discourses (e.g. empowerment or

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local hero stories, governmental critique, do-it-yourself tutorials, etc.) or types of information (descriptions and observations of specific species, official peer-review or policy publications, government data, etc.). (2) **Project management dashboards or software** are highly structured, member-based online environments where donors can donate funding to proposed development projects (e.g. installing wells in five villages) and, more often, small development organizations, often funded through the same platform, regularly report on their project's progress. Most information is visible online to anyone, though only members can enter or alter information on the site. (3) On a **mobile phone community radio platform**, callers can record themselves speaking, singing, playing music, and then broadcast these recordings to other listeners, and hear recordings made by others. (4) **Digital resource maps** (see Chapter 4 for a more extended analysis) utilize data from various sources to publish dynamic maps of a resource (water, in these cases) and, depending on the project, its availability, pollution levels, and the potential risks facing the resource and those who depend on it. (5) **Internet and software provisioning** is performed by an organization seeking to bridge the digital divide in India and to generally empower marginalized people with information technologies; their programs include computing centers, providing Internet or software in rural areas with poor connectivity, informational portals, and website design for small NGOs. (6) **Film** is a common media-form utilized in development (techno)media, and in this sample, one organization disseminates films within an annual film festival featuring shorts to feature-length films; another organization produces short films in local languages on agricultural techniques or hygiene and then shows the films to rural self-help groups in India and Africa to improve health and livelihood. (7) Another example of development (techno)media exists as an extended **school assignment** (see Chapter 4) on

water budgeting and conservation for students and teachers in participating schools and colleges across India. (8) **Training Programs** are at the heart of the operational model for several organizations, which are often invested in many other kinds of projects and policy entanglements. Trainings can be offered for free, by scholarship, or for a cost and occur over a delimited period of time (from 2-3 days to one month) to educate citizens, students, other non-profit organizations, journalists, or government officials in a new topic (e.g. groundwater), set of values (e.g. environmentalism, holism, sustainable management), and/or development technology (e.g. wastewater treatment). (9) The broad term, network, is assumed by **(Organizational) Networks**, which usually consist of a nodal organization that oversees a larger network of organizations or members who share a common goal or interest. Such networks broadly facilitate information exchange between different members, and some are organized to accomplish specific goals or achievements. (10) **Media outlets** in the sample operate according to a journalistic paradigm for investigating and regularly reporting on issues of wide public concern and interest in the topics of environment and development. Most media initiatives included in this sample identify development or government policy as a principal area of intervention for their work. Finally, (11) one **Media Synthesis/Analysis** program synthesizes the coverage of environmental topics within the Indian media landscape. Based on these syntheses, the organization produces daily media summaries and specialized reports for the Government of India, most of which are also publicly available.

Reports of Impact

Many organizations reported having made small, but sometimes substantial, changes to society. While I cannot verify these accomplishments, I summarize them here to present

how interviewees conceptualize social change and their program's contributions to it. Seven organizations, nearly 25% of the sample (and only those from media, organizational network, or training program paradigms), said that they have directly influenced government policy by chairing or serving on committees for particular national policy formulations (e.g. the National Water Policy, the 12th Five Year Plan) or by publishing stories that swiftly and directly contribute to policy changes. One organization, which researches water conflicts in India, established an alternative reservoir operation model for a river in Kerala where people who lived along one tributary, effectively half of the river, were no longer receiving any water due to several hydroelectric dams which had been built over several decades. After several years of building community and local political support, the organization planned and helped institutionalize a new model for releasing water among the hydroelectric power generation stations, bringing water to the full length of the river and to areas which hadn't seen water flow in over fifty years – all without diminishing power production.

The realms of public policy are not the only targets of intervention or means to make broad impacts to society. One organization claims to have directly funded or guided projects which resulted in two million people securing potable water access when they did not have it before. Others have disseminated low-cost water-saving, filtration, or agricultural methods to thousands of people and villages across India, Asia, and Africa. Another reports to have established over one hundred computing resource centers in rural India. Another organization, which disseminates uplifting stories of positive news and impact, encourages its readers to further support the people or organizations covered in the online magazine or in their own social worlds. The publication's editorial staff makes a point to follow up with people who have been covered in their original reporting and often finds that people have

responded to the initial coverage with donations and good deeds. Impact does not necessarily

follow from purity or scale of vision or the amount of funding an organization has (though,

based on the sizes of audiences or people reached estimated by interviewees, well-funded

organizations tend to reach more people and can mount more intensive and consistent

interventions with greater ease than those with precarious funding situations). Organizations

often spoke of achieving substantial impacts to society only after extended and highly

focused campaigns, such as achieving the cleanup and restoration of seven rivers in Gujarat,

as overseen by one group, or preventing specific infrastructure projects from proceeding on

the basis of extended critical analysis. Sometimes the impacts are unintended, as when a post

on a biodiversity web portal led to the discovery of a spider species which had never been

documented in India, leading to a published academic paper (see Kulkarni and Yadav 2015).

Size, Scale, and Funding

Most programs included in this survey are small-scale operations with fewer than ten

staff and with a budget between 50 to 125 lakh Rupee, or one to two hundred thousand US

Dollars (USD), per year. Some are even smaller – run by one person on a voluntary basis or

2-3 part-time staff with very little or no budget. They can also be quite large – with staff sizes

over 40 to 400 people and annual budgets into crore Rupees or millions of USD, and these

outlier initiatives are large either because they have substantial funding or have reached a

degree of renown that permits them access to resources necessary to operate at larger scales.

Web portals occupy this whole range with one operating because of the voluntary labor of

one person and no budget and another, supported directly by the Government of India,

employing 25-40 full-time research scientists and IT specialists and budgeting $13.5 million

for their initial setup. It is telling that Indian Rupees were hardly the single currency

referenced during interviews, as many programs derive their funding from a range of sources,

international and Indian alike which may designate budgets in Rupees, U.S. Dollars, or

Euros. Within the sample, approximately one third of the programs received funding

primarily from grants or "partnerships" (usually from a mixture of international and Indian

sources), another third were funded by a long-term donor, and others depended on either a

mixture of the two or a more novel funding strategy (e.g. subscription, advertisements).

Except for the programs with permanent patrons, many organizations had experienced

periods of financial struggle when, for instance, grants were difficult to obtain or when the

program had to spend several years in a dormant mode during gaps in funding[26].

Historical Influences and Predecessors

An absurdly complex institutional field
 The various trajectories of these programs show that this field resists simple

categorization – indeed, the categories that comprise it are often porous. When does a

multimedia website become a web portal? What about the organizations that run training

programs *and* web portals, among other communication exercises (stakeholder dialogues,

conferences)? This variety signals the diverse ways these development programs utilize

media, often blending approaches and labels from development communication, journalism,

education, protest or campaign activism, academic research, Knowledge for Development,

ICT4D, Knowledge Management for Development (KM4D), "civic media" or "civic tech,"

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[26] However, a lack of funding was not always problematic: The representatives of two initiatives admitted that not needing (in one case) and not successfully acquiring (in the other) funding was liberating for their communicative work, as they never felt beholden to a donor or board of directors. Nor were they compelled to subject their audiences to paid advertising or streamlined content production goals which might further commodify their work. Without funding, they thus could determine their messaging with freedom even if it circumvented the ultimate size of their audiences.

"change blogging," [online] knowledge sharing, media aggregation, citizen-science, cartography, or film. The assemblage of development (techno)media is so messy that an absurdist taxonomy[27] might be more suggestive for describing the field at hand, such as this one:

> (a) those programs created and funded by tech entrepreneurs,
> (b) those that are in English, Hindi, and "other local languages as needed,"
> (c) those that work out of a central office,
> (d) digital maps,
> (e) portals,
> (f) networks,
> (g) facilitated stakeholder discussions,
> (h) those included in this classification,
> (i) those that circulate written or recorded submissions from end-users but try not to edit too heavily,
> (j) those that partner with or receive funding from UNICEF (or the World Bank),
> (k) those which are monitored or audited for performance according to rigorous scientific standards at every step,
> (l) miscellaneous,
> (m) those which have just installed an Internet or media center in Bihar, and
> (n) those which, from a distance, look like journalism.

Such an absurdist taxonomy suggests what features might emerge if one were to analyze the sample according to different themes: budgets and sources of funding, media forms, informational philosophies, languages. Complexity and contradiction are inherent to the field of development in many ways, and they should not be muted to service grand historical narratives (Kumar 2019). But much of the complexity of development (techno)media can be explained. Development is characterized by diverse institutional layering and is often carried

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[27] In the fictional taxonomy presented by Jorge Luis Borges in "The Analytical Language of John Wilkins," Borges writes, referring to an obscure Chinese encyclopedia and a Dr. Franz Kuhn who has referenced it, "animals are divided into (a) those belonging to the Emperor, (b) embalmed ones, (c) those that are trained, (d) suckling pigs, (e) mermaids, (f) fabulous ones, (g) stray dogs, (h) those included that are included in this classification, (i) those that tremble as if they were mad, (j) innumerable ones, (k) those drawn with a very fine camel's hair brush, (l) others, (m) those that have just broken a flower vase, and (n) those that resemble flies from a distance" (1973). Citing a Chinese dictionary called the Celestial Emporium of Benevolent Knowledge, a fictitious construction, Borges calls upon the classification system to problematize taxonomic exercises, which produce vague, arbitrary, contradictory, overlapping categories that are full of conjecture.

out through alliances between, for instance, various government institutions, NGOs, multilateral organizations, development banks, and individuals who act as "brokers and translators" (Lewis and Mosse 2006) of the development process and otherwise influence development through an array of person- and situation-specific skills, interests, and decisions. Development, especially if we think about it as the attempted resolution of socioeconomic unevenness, also invites an impossible array of logics, institutions, and agendas into its folds. But the field which I call development (techno)media arises from an even more specialized history that has centralized technoscientific imaginaries, new technological devices, and informational forms and networks. I briefly discuss this history, which has been unfolding in the Indian subcontinent since at least the colonial era, in the following section.

The importance of information and information-disseminating technologies to technoscientific development has only increased as telecommunications and ICT have become the dominant face and aspiration of national development. One aspect of the "charm" (Kumar 2019) – fantasies, dreams (Phalkey and Chattapadhyay 2016), imaginaries (Marcus 1999), or fetish (Sanjay 2002) – of new communication technologies, as with various technologies which preceded them (e.g. agricultural machines, irrigation or railway networks, dams), is that they are envisioned to be capable of alleviating deep socioeconomic inequalities or accomplishing important feats of national development, such as in this quote by Sam Pitroda, who has been a fixture in the Indian government's utopic pursuit of development through telecommunications devices and expertise (see Chapter 1): "as a great social leveler, information technology ranks second only to death. It can raze cultural

barriers, overwhelm economic inequalities, even compensate for intellectual disparities. In short, high technology can put unequal human beings on an equal footing, and that makes it the most potent democratizing tool ever devised" (Pitroda 1993, 66 cited in Agur 2018). Such utopic framings of telecommunications play a significant role in sculpting government policies and development programs, which often congeal around particular communication media (e.g. the Internet) or devices (e.g. tablets, mobile phones, satellites) – programs which I call development (techno)media in this chapter.

In their examination of several recent programs of development (techno)media (e.g. biometric identification, microcredit loans), Itty Abraham and Ashish Rajadhyaksha historicize these relatively recent programs in light of the early commitments to technoscience established by the Indian state (2015). Situating national policy and administration in post-Independence India as distinctly inspired and guided by technological fields, they point out the broad terrain which technoscientific imaginaries and information offered state planning: "Coined by Jacques Ellul in his dystopic critique of Western society, "technological society" is an apt descriptor of the vision held by early Indian state managers in their effort to transform their impoverished and largely agricultural society into a modern economy. Technological societies are characterized by a tendency to use languages, images, and metaphors drawn from the mechanical world in order to make comprehensible and powerful arguments for how public policy should be made. Knowledge of the mechanical world—technoscience—replaces other forms of knowledge seeking to manage social issues" (Abraham and Rajadhyaksha 2015, 68). The ample privilege technoscience has received within development discourse and planning derives from a slightly older past than the one described in Abraham and Rajadhyaksha's article, however. As Gyan Prakash convincingly

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shows in *Another Reason: Science and the Imagination of Modern India*, the mutual

entwinement of nationalism and technoscience in Indian history was established during the

colonial era as the Indian Independence movement utilized scientific discourse and authority

in ways which were key for displacing colonial legitimacy and establishing a distinctly

Indian modernity (Prakash 1994). The entwinement of nationalism and technoscience

continued after Independence and was institutionalized by the Indian state as it pursued

national development and modernization, as Abraham and Rajadhyaksha discuss. Because

state managers have nursed a distinctly *ideological* commitment to technoscience in their

pursuit of national development, technoscience has come to infuse and guide development in

many different ways. From, as Abraham and Rajadhyaksha point out, deriving "languages,

images, and metaphors" to dictating the kinds of expertise, objects, and infrastructures sought

in state planning, the influence of technoscience has produced a wide range of effects. What

is important for this discussion, though, is that development (techno)media has emerged from

these ideological historical trajectories; I articulate three of these trajectories here: devices as

the desire of development, ICT as development expertise, and Internet access as

empowerment.

The Device as the Desire

In their analysis of a government program to disseminate cheap tablets called

"Aakash tablets" (*aakash* means "sky" in Sanskrit) across schools in India, Jahnavi Phalkey

and Sumandro Chattapadhyay draw a history of development (techno)media and the

"technological imaginaries of mass education" which underlie them that goes back to at least

the early 1960s in India (2016, 452). Spanning satellite programs which were designed to

broadcast educational television programs throughout rural India, handheld computing

devices, Internet kiosks, and web portals, various government-sponsored programs pursued

an evolving technoscientific imaginary of development that looked to new

telecommunication technologies to reach the masses. Some programs accomplished rather

impressive technological achievements – the collaborative launch of one of India's first

satellites and subsequent development of the country's satellite program, the clear and fast

satellite transmission of televised educational content across the nation, and the development

of advanced personal computing technologies at comparatively low price points; however,

they all failed in the very goals they were supposedly designed to achieve. Poor power

supply, faulty hardware, poorly designed educational content, collaboration and sourcing

issues, and disrepair have variously plagued the programs, yet official discourses remain

positive about the programs and perpetuate their legacies as successful. This dissonance

between stated purposes and achievements in these programs – and the fact that many

programs have been much clearer about their technological goals than their educational ones

– has led Phalkey and Chattapadhyay to argue that "the device has become the desire" (2016,

472) within development and mass education.

The Aakash tablet and similar programs which preceded it, such as satellite-

orchestrated educational broadcasts, resemble the objectives, program designs, and

institutional configurations of the development (techno)media I discuss in this chapter, but

these are not the first instances wherein devices have been the mainstay of national

development. Spanning colonial and postcolonial eras, Prakash Kumar's work on the

proliferation of American agricultural machines and expertise within Indian educational

institutions and agricultural policies shows how new technological devices and knowledge

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guided government activities and policy at various points in time. The colonial government, for instance, promoted the importation and use of large agricultural machines, pledging their promise to future agricultural productivity in India, even as the performance of such machines initially produced questionable returns and as their import proved catastrophically unwieldy, such as for Jogendra Singh, a farmer who imported a large tractor to his farm in Kheri. Kumar writes,

> Kheri was not even accessible by a *kacha* road (dirt road). The nearest post office was nine miles away. Singh knew that carrying one hundred maunds of grains to the district headquarters usually cost Rs. 16, an expensive proposition. Under such circumstances getting a huge machine all the way to Kheri was a herculean task. But Jogendra Singh was determined. Taking the advice of the government's agricultural engineer, he selected the appropriate tractor model that would best answer his needs. He purchased it from local agents, Messrs. Burn and Company in Calcutta, and had it put on a train. The machine was offloaded at Lakhimpur and thereafter started the arduous twenty-one-mile journey, which it completed in a month and a half. Maneuvering through soft soil and *nala*s (streams), even dismantled once to be put on a boat to cross a deep stream and then reassembled on the other side by the company's mechanic, the machine reached Aira one evening, "followed by crowds of [curious] villagers." (Kumar 2019, 124)

Also in tow on Singh's journey were the highest officials of the colonial Agriculture Department, who sought to assist the operation and document its every detail so to assess the utility of such machines to colonial agriculture (Kumar 2019, 120). The close presence of the colonial government in Singh's selection, import, and use of his tractor shows the extent to which colonial state powers were involved in spreading machines and methods for cultivation. Much like the devices aspired to in contemporary programs of development (techno)media, Kumar argues that the "charm" of emergent technologies played a significant role in the pursuit of new American agriculture technologies within colonial India.

Large dams (famously referred to by Nehru as "the temples of modern India") and irrigation canals, which simultaneously symbolized the development of agriculture and industry, were of special importance during Nehru's tenure, demonstrated a kind of development achievement, and came to be equated with nation-building (Khilnani 1997; Roy 1999). Dams were such a key fixture of Nehruvian development that they were often the subject of ceremonial state displays and the widely circulated government documentaries made by the Films Division of India, a department within the national government (Roy 2007; Deprez 2013). During the rule of Jawaharlal Nehru, development alternately focused on agricultural and industrial development (Metcalf and Metcalf 2006), and was marked by the construction of large public works and extensive investments in higher education and technical institutes.

But the device – and the socioeconomic mobility, development achievement, and democratization imagined to be associated with it – is not always the only desire that guides object-oriented development. Fixtures that many see to be key to national development and which require highly specialized technological expertise to construct – expansive communication and transportation networks, irrigation works – were installed with zest throughout India during the colonial era, particularly following the shifts in colonial administration after the uprisings of 1857 (Goswami 2004). The juncture caused by the 1857 uprisings marked a definitive shift in strategy of colonial government, which began to present itself as a benevolent ruler with a civilizing mission for the Indian masses. Thus large-scale works were not mere pursuits of desire for technoscientific achievement but were rather discursively cast as helping or improving colonial subjects and thereby meant to lend legitimacy to British rule even as they were underscored by racist and deterministic

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ideologies (Prakash 1994) and further exacerbated the very unevenness they were supposedly meant to absolve (by helping the British Raj derive profits and resources from the colony). This unevenness became especially exacerbated as Britain's economic dependence on India grew throughout the 19th and 20th centuries (Goswami 2004).

A much more recent instance is strikingly similar: the 2014 campaign made by Facebook's Mark Zuckerberg to universalize access to the Internet in dozens of countries across the Global South – or, as other programs and internal communications at Facebook suggested, to create a vast pool of future consumers for the social media company (Bhatia 2016). Facebook's aim to, as they framed it, universalize Internet access show how corporate profit and expansion has also informed recent development (techno)media projects. The program, initially termed Internet.org, was presented as a philanthropic pursuit meant to provide a free, basic version of the Internet to all who did not have access to it, an endeavor many might have been supported in India given that only 19% of the population accessed the Internet at the time (IAMAI 2015). The Indian portion of the campaign hinged upon wooing the Government of India, particularly its telecom authorities, and various phone corporations, who were persuaded to foot the bill for the program under the premise that many Internet.org beneficiaries would soon become paying customers. After sampling a limited Internet and the services it could provide, Facebook suggested, many Internet.org users would elect to purchase their own data plans and thereby become customers of the mobile phone companies who paid for the program's costs. But what would be provided was not, in fact, the Internet, but a small cache of websites and apps hand-selected by Facebook which were given a "zero-rating," meaning that any data used through these programs would not be counted against data purchased for a mobile phone account (Electronic Frontier Foundation 2016, cited in

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Vaidhyanathan 2018). Prompted by fears of monopolization of an Internet service (and by a pompous, tone-deaf American corporation at that), public outrage ensued. Ultimately, after a long fight which entailed seemingly ubiquitous, and sometimes misleading, advertising (online and offline), a changed name ("Free Basics"), closed-door bargains with India's telecom lobby group, NASSCOM (the National Association of Software and Services Companies), and a National Telecom Authority ruling, the program was legally prohibited under the ruling that it violated network neutrality. The fiasco surrounding Internet.org and Free Basics shows how the pursuit of universalizing digital technologies is not necessarily motivated by selfless intentions or a fetish of new technologies but also the profit and expansion of international corporations in a style many would call neocolonial (Bhatia 2016; Vaidhyanathan 2018). It also shows the array of publics, including a sizeable telecom institutional ecology and over 16 million individuals who submitted complaints to the National Telecom Authority (Bhatia 2016), who mobilized against the arrangement, however much they have been interested in the device – or technology – at hand.

Telecommunications Expertise as Development Expertise

As the objects of development desire have shifted from agricultural machines and dams to tablets and telecommunications services, the heroic figure at the center of this scene has shifted from the civil to the software or computer engineer (see Chapter 1), as enrollment patterns – and the operative narratives – at prestigious engineering colleges can attest (Subramanian 2015). These shifts have made possible the emergence of the field of development (techno)media discussed in this chapter and are importantly demonstrated within techno-utopic policies put forth by the Indian government and tech-sector

entrepreneurs, who now embody the expertise most preferred within development (Philip 2016).

Regardless of administration or ruling party, the Indian government has promoted telecommunications-centric development and policy initiatives as it invites tech sector entrepreneurs to formally contribute to national development planning. Since Indira Gandhi's tenure[28], nearly every government administration has enacted policy plans that go well beyond simply maintaining and expanding the telecommunications capacities of the country. One example of the Centre's more recent digital-era technoscientific development can be found in the construction of Rajiv Gandhi's administration, which rested in part upon a close advisory team of software and computer engineers (Fernandes 2006; Radhakrishnan 2011). This administration began bringing an already technoscientific national development into a new era of technology by launching what was known as Technology Missions. These missions included economic reforms and deregulation that were key to the development of the tech sector in India, but they also attempted to solve problems related to water, health, and other pressing development issues using new information and telecom technologies (Pitroda 2017).

Atal Bihari Vajpayee, prime minister during the years of 1998-2004 launched IT for the Masses Working Group, which proposed a plan to "ensure that all villages are connected by an information superhighway and that every telephone booth becomes a fully-fledged information center" (Sanjay 2002, 202). The working group was introduced in the 10th Five-Year Plan and was continued at every subsequent opportunity until Narendra Modi's

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[28] Development during Indira Gandhi's rule was centered on the application of agricultural science and expertise (i.e. the Green Revolution), population control, and programs of welfare redistribution (Metcalf and Metcalf 2006; Gupta 1998) but not technological devices or telecommunications per se.

administration restructured the central government's planning and budgeting processes, which effectively removed the Five-Year planning exercises (Ministry of Electronics & Information Technology 2016). With such working groups, Vajpayee prioritized utilizing IT technologies to alleviate poverty in addition to growing IT as an industry and an infrastructural system that would enable everyday communication. At the time, fewer than 5% of Indians had access to the Internet, and some note that many of these technologies benefited elites and their advertisements consciously targeted upper segments of society (Saxena 2009 via Agur 2018), thus strengthening the connotation of computing skills and devices as vehicles for prestige and uplift (Pal 2012).

Under Manmohan Singh, prime minister between 2004-2014 and also the chief architect of India's 1991 economic liberalization reforms, a number of high-technology pursuits ensued; many were under the direction of Sam Pitroda, who was appointed, again, as a key development visionary within the government. The programs initiated by Pitroda include the National Innovation Counsel, which further expanded the governmental structures and ideologies which applied IT expertise and technologies to issues of development; the National Knowledge Network, an infrastructure designed for high-speed internet connectivity across nation, which was first implemented in 2014 (Journey of NKN 2015); and also the National Knowledge Commission (see Chapter 3 for an extended discussion), a committee which made broad-sweeping recommendations for policy reforms in many areas of society, including primary and higher education, libraries and information dissemination, and promoting the use of English as a required language in all schools (Commission 2007; Commission 2009; National Knowledge Commission (NKC) of India: An Overview n.d.).

Since Narendra Modi first took office as Prime Minister in late May 2014, he too has sent strong signals that he will continue to prioritize these particular commitments to telecommunications-as-development within his administration well beyond the predictable concerns of public communications infrastructure, government cybersecurity, and digitizing government processes. One indicator is Modi's Twitter account, which has played an important role in forming Modi's political brand; on Twitter, Modi's most frequently tweeted topics are high technology and national development or a combination of the two (Pal 2015; Pal et al. 2016). Soon after Modi took office, he invited a parade of American tech entrepreneurs to India – from HP, Apple, and Facebook – and also made a point to visit Silicon Valley soon after (Goel 2015). These visits, along with Modi's Twitter presence, are not only performative, utilized to paint a public image of the politician as technologically savvy, but they also suggest a larger orientation of techno-utopic values that manifest in deeper policy arrangements, as with, for instance Facebook's Internet.org, which was approved enthusiastically by Modi. Modi also has engaged Infosys co-founder (and, as discussed in Chapter 1, water hackathon patron) Nandan Nilekani to oversee major projects of national development, including the Congress-era biometric identity and banking card program for all citizens and digitizing the nation's financial transactions.

While many of these policies have facilitated the building of infrastructure and economic changes which have, in turn, enabled the proliferation of high-tech devices and their use, these programs are about much more than just access to transportation, communications, electricity, or irrigation. They are also a predictable lineage of dreams held by those with governing power, despite differences in party affiliation or in administration changes, to make Indian citizens informational citizens of a society ideologically,

economically, and politically oriented around consuming and producing knowledge and using new technologies. The task of fulfilling that dream is predictably given to technoscientific experts (see Chapter 1). Beyond experiments in improving formal education, these policy initiatives are state-sponsored attempts at manifesting a so-called "knowledge society" in which consuming and producing information constitute significant cultural and economic activities. The knowledge society is a kind of techno-utopic dream in which society is enabled by a thriving ICT network and everyday social life and major institutions, such as economy, citizenship, and politics, are restructured around producing information instead of manufactured goods or agricultural production.

Internet Access as Empowerment

While early iterations of development (techno)media were built around an array of devices and communication technologies – satellites, television, tablets, computers, the Internet, kiosks, and so on – the Internet and mobile phones have become dominant as the media of preference within development (techno)media today. Some discussion of the history of these modes of communication in India is thus warranted, and I start with several problematics: Nishant Shah, in his "Notes for a New Historiography for Technosociality," states that there are three problematic assumptions within histories written of the Internet (2017). I will discuss the first two here[29]. The first assumption Shah places before us for consideration is that of the genesis of the Internet in Silicon Valley with ARPANET, an early computing network established in the United States which linked various military,

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[29] The third assumption made by much historical writing of the Internet is that Internet end-users and their practices, though quite various, are somehow globally uniform; Shah contends, however, that the particular locations and [sub-]cultures of a given person or Internet practice inform Internet use and often render its meanings and values qualitatively different than uses elsewhere (2017, 50-51).

government, and educational institutions. This genesis story is widely reinforced throughout Internet historiography through narratives which describe the Internet has having originated in the West and then imported elsewhere. But, as Shah reminds us, there are many potential beginnings to the vastly complex socio-technological assemblage which we call the Internet, such as the emergence of the computer, communications technologies developed in World War II which propelled computing into a networked mode of connectivity, the technological subcultures which led to the envisioning of the worldwide web, and the spread of global and national infrastructures which continue to make the Internet possible (2017, 49). The history of the Internet is, thus, a history of many discoveries and technological inventions which have been made in many places and which depend upon the actions of government bodies, research groups, militaries, and the experiments of individuals. In India, the Internet first came to major research institutions, then to technical universities and technology corporations, and then to upper-class urban Indians (Pal 2010, 103).

The second assumption highlighted by Shah is that the Internet is discussed in scholarship as if it were one distinct, concrete, and knowable entity which can be adequately traced in all its functions through time and space rather than the amalgam of devices, corporate spaces and arrangements, government policies and bodies, end-users, networks, and media which comprise it and have built it over time. Historical narratives often observe the imperative to, as Shah writes, "produce a coherent and consolidated vision of the Internet that would synthesize and stitch together these different fragments, producing the Internet as a monolithic structure that has expected and accepted practices, processes, and people who embody and illustrate it" (2017, 50 with reference to Bagga, Keniston, and Mathur 2005). The Internet is a fundamentally experimental and ever-changing medium that is, again,

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dependent upon many particularities of a given place – the practices and improvisations of its users, its infrastructures, and the policies which regulate or promote its formation. Indeed, Vaidhyanathan reminds us that because governments can heavily surveil and regulate Internet services, the mere location of the server managing the web traffic of a given website or platform will render the activities of end-users to more, less, or varied surveillance and control, reminding us that "a server in Shanghai will generate different effects in the world than one sitting in Vancouver, largely because of the relative willingness of those governments to control and monitor activities over those servers" (Vaidhyanathan 2018, 218). Histories and ethnographies of the Internet, however much they may present themselves as representing the Internet as an opaque whole, cover, at most, fragments of this expansive and mutable assemblage. The small piece of Internet which this chapter focuses on is programs which utilize the Internet (or, more seldom, other communication media) to achieve some development goal.

In Shah's discussion of the second assumption common to Internet historiography, the assumption of the Internet as one distinct and known thing, he bemoans that much Internet historiography focuses on the scale – or size and reach (often called "penetration") – of the Internet rather than the diversity of media and practices which it has made possible (2017, 50); however, in the particular area of Internet practice and sociality which I focus on here – development (techno)media – the reach of the Internet is quite important, for it determines how many people and which segments of society have access to Internet technologies – and the development good they are purported to deliver. Indeed, an important aspect to the development imaginaries of new communication technologies in India is that they are imagined to decolonize and democratize informational forms and infrastructures

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which had been previously used to concentrate state power. However, it is important to

understand that discourses which claim the democratizing potential of development

(techno)media contradict the achievements of such programs, which have either more

dependably developed the technological capacities of elites or the government-industrial-

academic complex that created them than of the citizens they are meant to benefit (Pal 2003;

Phalkey and Chattapadhyay 2016) or have been disseminated through the Internet, a rather

exclusive medium, as I show below.

Over the time period bracketed by the various programs discussed above (e.g.

Aakash, Internet.org) and even much of the scholarship cited here, Internet access has slowly

grown in India to reach approximately 500 million users in 2018-19 (Mathur 2019; IAMAI

2015). Though for much of the period under discussion in this chapter (1982-2014), Internet

access in India remained quite low, well below 10% of the population until about 2011 and

rising to 19% in 2014 (IAMAI 2015, see Figure 3). These figures underscore the fact that the

Figure 3. Internet access by percentage of population for India, Brazil, Russia, and China.

Internet has not materialized to be the widespread, inclusive digital communications medium

that optimistic development discourse has often projected it to be with such names as "IT for

the Masses." Pal notes that many early development programs which were launched under

the purview of universalizing the Internet have largely benefited elite members of society

even as they are pitched as serving the poor – or failed to function at all (2003). For instance, an Internet-based program requested and largely funded by gram panchayats (an elected village council and the smallest unit of governance in India) which was to help rural farmers file grievances, access healthcare and crop information, and file government documents promised offerings which were much more useful for land-holding rural elites than for the largely illiterate and landless farm laborers who the project was described to benefit. Similarly, a set of Internet services based in libraries throughout Kerala offered an array of public services and described itself as serving lower classes and the poor, but its assumption of literacy and a high educational level for participants ensured that the program's beneficiaries would likely be middle and upper classes. In yet another example, when the Internet kiosks at the center of Vajpayee's "IT for the Masses" policy were reported to be functioning and being built across Rajasthan, and at the time of Pal's writing, only a single kiosk had been built for the program which was made functional only for a brief period which corresponded with a visit from then-U.S. President Bill Clinton (Pal 2003, 114). These patterns are not inconsistent with previous eras of development in which the poor were consistently invoked as the primary beneficiaries of development even as the benefits of many development policies went to those of higher class or caste standing (Kohli 2010; Kohli 2012; Fernandes 2004; Fernandes 2006; Gupta 1998).

Even early projections of the Internet's reach in India made by government representatives, Pal reminds us, seemed to hover, or remain capped, around 100 million, a number which strangely matched the number of literate English speakers in the country (2003). These official estimates, which were also trajectories of development plans and imaginations were, distinctly *linguistic* thresholds. Pal explains further that though official

documents and departments which held the growth of the Internet to English-speaking elites

did not address this paradox in their own proposals – and indeed largely did not offer

versions of their web presences in any language other than English – the linguistic threshold

of Internet access correlated to the number of Indians with a collegiate-level of education. Pal

suggests that while many Internet-based development projects and policies posit the Internet

as assisting job prospects or as supplementing education at various levels, the Internet more

so should be understood as a "communications empowerment tool" and that widespread

Internet use among non-elites depends upon the state ensuring – to a much greater degree

than it currently does – primary education for citizens (2003, 112). Today, Internet access is

growing at a much faster rate than developments in the mid-2000s would have suggested,

and this is largely due to the popularization of the mobile phone rather than any other

computing device or infrastructure (Mathur 2019). However, though India boasts, on

average, more than one mobile phone per person, due to the number of people who have

multiple cellular accounts, the percentage of access is hardly universal (it is closer to one

phone for every two Indians) and ends up reproducing – even as it somewhat mollifies –

inequalities apparent in earlier communications and information infrastructures (Jeffrey and

Doron 2013). These realities pose a contradictory proposition for development programs, and

much of the field of development (techno)media, seeking to reach rural or impoverished

subjects with Internet technologies.

Nonetheless, the field of development (techno)media is propelled by popular

discourses which posit ICTs as a key symbol of nationalism and a vehicle for individual

socioeconomic mobility. These imaginaries are not simply held by those with managerial

power. Preeti Mudliar and Joyojeet Pal have shown how the *general* popular discourse

surrounding the Aakash tablet project was dominated by nationalistic concerns: whether the

tablet was Indian-made, economic competition with China, and government control over the

tablet (Mudliar and Pal 2013). Propelled by media and government discourses which valorize

digital technologies, the computer is further seen among primary school students, their

families, and teachers as an "aspirational artifact" (Pal 2012, 1) which can lead to great

(though unlikely, Pal found) economic and educational opportunities. In this way, the

computer and Internet are just as much symbols of high status and socioeconomic mobility as

they are seemingly appropriate and apolitical tools for democratization, mass progress, and

public participation.

Past eras of governance and development also hinged upon particular flows, forms,

and infrastructures of information – but, even more so than Internet-based development

(techno)media, the benefits of these largely were directed toward, or at least managed by,

centralized political powers. C.A. Bayly has aptly argued that information and surveillance

networks, comprised of runners and spies, were integral to British colonial expansion and

dominance and were a vital element of political rule even before colonialism (1996). In her

work on the colonial production of India as a distinctly national space, Manu Goswami

describes the famous gazetteers of the colonial era, which documented many aspects of local

culture (e.g. caste groups) and economy (e.g. crops grown and traded, the location and size of

markets, soil composition, available water resources), and their importance to colonial rule:

> A central mandate of the newly instituted and reconstituted state departments
> (e.g., Revenue, Agriculture, and Commerce; Public Works, Finance) was the
> accumulation of specialized agricultural, commercial, and financial statistics
> that were systematized over time in district, provincial, and imperial
> gazetteers. The innumerable statistical records and surveys were integral to
> the consolidation and legitimation of colonial practices or restructuring
> wherein an ever-wider range of transactions were enveloped within the fold of
> the colonial economy and subjected to the regulatory practices of the colonial

state. The production of a distinctive state space required and generated comprehensive data about market structures, productive expenditures, property relations, agriculture production; cropping patterns, practices of consumption, and the like. The modalities of information gathering, in turn, shored up the institutional-territorial reach of the state into divergent social domains. The colonial accumulation of knowledge in the post-1857 period did not simply service internal statist functions, nor was it impelled by an economistic utilitarian function alone, for statistics of economic transactions were widely disseminated in an effort to make visible official claims of "material and moral progress." What is more, the intensified accumulation of knowledge was rooted in the transformation of colonial India into a second-order space welded to a globally organized imperial economy. In the context of the expansion and consolidation of Britain's economic hegemony, there was a sustained effort by the colonial state to record, classify, and determine the range of agricultural raw materials, economic resources, and industrial products on a local, provincial, and all-India basis. (Goswami 2004, 75)

Informational forms such as gazetteers – a form still reminiscent in contemporary development (techno)media, such as web portals – could archive and make visible aspects of society and economy which could be subject to colonial regulation and control, and they could serve the colonial state by widely publicizing its self-stylized performance of the ideal and beneficent landlord. Goswami further describes how new modes of accounting and the institution of annual all-India budgets drew abstract and crude equivalencies between aspects of the economy and resource base as they served more important functions of a newly emerging socio-spatial regime of colonial governance which effectively produced, institutionalized, and monetized a distinct geographical imaginary of India as a subset or second-order national economy within the British Empire (Goswami 2004, 74-82). Documentary forms were hardly the only technologies utilized by the British to consolidate their colonial control over India; the British also instituted an array of economic policies, from controlling indigenous currencies and lending practices to designating railway tariffs to facilitate transport to ports as opposed to other locations, and utilized large-scale public works to enhance the British Raj's transportation and communication (including its

centralized intelligence apparatus) access to the colony (Goswami 2004). Nonetheless, informational forms which could document and make visible not only resources within the colony but the colony as an *uninterrupted geopolitical whole* were inseparable from governmental imaginaries and essential to ongoing colonial projects of extraction, domination, self-presentation, and surveillance.

Similar informational forms have dominated state development exercises in the post-independence era as well. The gazetteer project, for instance, was continued well after colonial rule, albeit not with the uniformity many had dreamed for such an exercise of comprehensive description and accounting (Chaudhary 1975). (In the ideal of the genre, variations in categorization and labor would be obscured even though they are always carried out across vastly different geographies and by divergent arms of the state.) But as pursuits of the gazetteer post-Independence have been highly variable across regions, instead of volumes for every district of India, one finds not one encyclopedic reference for each district but, perhaps, one gazetteer for every other district, as in Orissa, or, in Andhra Pradesh, only one district gazetteer for every four districts. (This is not to even mention the time lapses across publications.) The incompleteness of these collections, at least from the view of a seemingly universal or singular governing authority, draws attention to the fact that such statistics and accounting are always, foremost, highly social exercises in which people and institutions create (rather idiosyncratically) the categories and descriptions which comprise national accounting.

Many demonstrations of transparency so common in contemporary development (techno)media were anticipated in the early Indian state's experiments with statistics, which quickly became a crucial technology of statecraft as early as the Second and Third Five-Year

Plans. Under the influence of P. C. Mahalanobis, a mathematician who first advised the early

Indian state as an expert for the Second Five-Year Plan, the state redirected its investments

from agricultural development (and wrapping up colonial projects of agriculture) to the

development of Indian industries but also, to still the critiques of a largely agrarian society,

promised, with what was commonly referred to as the Mahalanobis Committee, to *measure*,

and thereby demonstrate, the social justice and poverty alleviation achieved by the Five-Year

plan. Statistics, under survey and mathematical research teams overseen by Mahalanobis,

were the key technology by which poverty could be seen, monitored, and, thus, alleviated –

and by which the state could demonstrate its commitment and record in this area to large

publics. These pursuits prompted not only the execution of massive sampling and surveying

strategies, some newly developed by Mahalanobis and his teams of researchers and which

would later become fixtures both in the field of statistics and in national governance, but they

also generated lasting international liaisons between researchers and governments in the U.S.,

China, and Russia, all who sought to draw fruits from the burgeoning and experimental field

of statistics for political rule (Paidipaty 2019). In these developments, mathematical experts

and political institutions attempted to transform technologies which had been utilized for

colonial domination and also resistance (see Goswami 2004) into tools of socialist

development justice – or, at the very least, its appearance: Mahalanobis himself did not

ultimately believe the large poverty surveys he had overseen depicted a nation benefitting

overall from the Second Five-Year Plan. He concluded rather that wealth was being

concentrated toward the top, most elite portions of society. Though Mahalanobis ultimately

dissented from his earlier support of national economic policies, which he himself had

advised – and he was the only one to do so within the survey committee – his dissent was

politically managed by placing it in an appendix at the very end of the committee's report, effectively buried from public scrutiny (Paidipaty 2019).

As these examples suggest, particular informational forms (e.g. gazetteers), modes of information collection (e.g. population surveys) and analysis (e.g. statistics), and information infrastructures (e.g. runners and spies) – tended to shore up existing political powers rather than disperse or democratize them. Information and infrastructures for its transmission have thus played a vital role for regimes of political rule since well before the colonial era, for they could assist rulers and states in manufacturing legitimacy through the performance of beneficence or development achievement and in maintaining control through the surveillance and censorship of subjects and enemies. While new media technologies such as the Internet are hardly egalitarian or as openly accessed as some suggest, they do mark a true departure from these older histories in the potential they create for anyone who has access to them to connect and communicate with one another (Jeffrey and Doron 2013). Development (techno)media thus presents a compelling site of study to understand how the politics of information, and its application in exercises of national development, shift in a historical era defined by the emergence of new communication technologies and economic liberalization.

Development (Techno)Media and the Indian State

Many different types of institutions have participated in the emergence of the field of development (techno)media, as well as the shifting commitments to technoscience in past eras of national development, but it is important to recognize that the state has historically played a dependably central role. Kumar's work on agricultural modernization (2019) demonstrates this even as the focal point of Kumar's historiography is trained on

transnational relationships and the activities of institutions and individuals rather than the public face of national government policies. Across several historical examples – the import of new agricultural machinery in the early 20th century, the importance of agricultural education in American Presbyterian missionization in the late colonial period, and a Cold War-era "aid program" which sent U.S. agricultural experts from land grant institutions to consult and guide Indian agricultural education and policy – Kumar shows how mechanization and expertise has consistently exerted a charm for those with governing power (2019). Explaining further, Kumar argues that American technic needed such charm to proliferate in India, for it encountered resistances from a British-governed colonial apparatus and, post-Independence, from powerful national discourses of self-reliance against American imperialism; charm of the technoscientific could thus perform needed political work for those who sought to pursue agricultural modernization through American machinery and expertise. Kumar's depictions of these three historical moments, such as in the extended example of importing American agricultural machines to colonial India (see above), also show the centrality of the state throughout otherwise transnational relations of technoscientific national development. Hardly limited to the colonial period, agricultural modernization again hinged upon the importation of American agricultural expertise and machinery in the era just after Independence; although during this time, it took the form of formalized agreements between the Ford Foundation, the U.S. Department of State, and the Government of India in which agricultural specialists at land grant institutions in the U.S. – and huge new streams of money (amounting to hundreds of millions of dollars per year) – were sent to India to establish and guide agricultural institutes around the country. These flows of expertise and capital were sought by all levels of the Indian state (Kumar 2019). Although these Nehruvian-era

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programs came out of an American agenda to prevent the spread of Communism (by preventing the collectivization of agricultural production) and often came with pressure from the U.S. government to alter national economic policies (Gupta 1998; Kumar 2019), they show how projects of national development hinged upon Indian state policy, agreements, and patronage and that the state was directing and influencing technoscientific development projects in important ways. In his historization of DFID (the United Kingdom's Department for International Development), David Mosse depicts a similar set of relations during the 1980s, which entailed aid agencies, often appendages of foreign governments, establishing development programs or flows of capital as a direct component of international diplomacy with most aid going toward the development of large infrastructure projects and natural resource extraction (2005, 22). Even as these histories go beyond the "Nehrus and Indira Gandhis" (Kumar 2019, 142), positioned as they are at distinctly transnational nodes of development and among a vast array of individual development brokers, they affirm rather than refute the historical importance and centrality of the Indian state in matters of national development, technoscientific or otherwise.

But even as the state has engaged an array of actors within its pursuits of national development, the Indian nation-state has endured, in its popular ideation, as a unified, legitimate, and principal political authority in India, unlike in many post-colonial states, as Srirupa Roy's work on Indian nationalism and political imaginaries shows (2007). Across several institutions and events – Republic Day parades, the Government of India's Film Division, the induction of a scientific education institution, and a steel township – Roy shows how the legitimacy and centrality of the nation-state's authority has been asserted through extensive visual, spatial, and ritual regimes, assertions made not only by the state but also by

an array of other actors. These discursive regimes have worked to consolidate and validate

particular configurations of nationalism and the state's authority within it, particularly those

nationalisms which are based on "unity through diversity." These discourses and

representations have often acted in reference to just one or two of the state's variegated,

multifaceted parts, though the imaginary is broad; it refers to the nation-state as a whole.

However, my analysis of development (techno)media departs quite drastically from

the political configurations found within various historical moments by these scholars.

Development has long been comprised of a veritable cocktail of institutions, as Kumar's and

Mosse's work shows, but as new media forms and communications technologies have

emerged simultaneously with liberalized regimes of governance, those cocktails have

noticeably shifted, as this study of development (techno)media makes clear. Development

programs in the first decades after Independence or during the colonial era may have been

comprised of several institutions, often government departments in partnership with a couple

of educational or patron institutions (even the Mughal Empire contracted a young East India

Company to manage its Calcutta trade accounts (Bayly 1996)). But the development media

and technology programs of contemporary India are often started or sustained by a much

more complex mixture of NGOs, multilateral agencies, development banks, private

foundations (including the CSR of corporations), institutions of higher education, primary

and secondary schools, government institutions, individual activists, volunteers, interns,

researchers, and "development practitioners." Usually financially sustained by the private

wealth of corporations, industrialist families, or international development organizations

(sometimes in combination), their ongoing operations depend on, foremost, the institutional

shell of the non-profit organization and also the daily labor of staff or volunteers.

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Similarly, while information and communication infrastructures have long been built to sustain state power and, more recently, to perform technoscientific development, the emergence of new information communications technologies, which can facilitate much more popularized and decentralized communication pathways between a larger array of people, corresponds with the emergence of distinctly new models and imaginaries for development, such as the field of development (techno)media. Of course many informational or communicative models at the heart of contemporary development (techno)media are continuations of past informational projects, such the encyclopedia-like gazetteers of the colonial era which contained information about every resource and feature of note within each village and district of India, were compiled by a diverse cadre of sources, and were meant to be reference documents for a similarly diverse audience, from travelers to industrialists and colonial rulers (Chaudhary 1975); agricultural extension programs (such as the variety Kumar describes above); or others (e.g. Gandhian traditions of activism, journalism, academic knowledge production, financial accounting and audit cultures, the political salon). But such projects took on new forms as digital channels of communication, such as the Internet, became newly available and popularized. Indeed, over half of the organizations in the development (techno)media considered here were founded between 2005 and 2009, a period in which new formats of development media begin to emerge among the survey sample: web portals, project management dashboards, mobile phone platform, film outreach programs, and most online magazines and blogs. These projects, all which utilize digital channels to reach their audiences, were founded at a time during a moment of concentrated enthusiasm for the Internet – concentrated, in part, because the Internet was used by only about 4% of the population in India at the time.

But the institutional sponsorship and informational models which characterize development (techno)media are but smaller components of a greater reordering which has been at work in development. What became evident as I conducted the survey presented here is that more recently founded organizations have forged themselves within a distinctly different political grammar than organizations which were founded in the 1990s and 1980s. Most substantially, across organizations, the observed political authorities, whether as targets of critique or entities to support, have shifted. One component of this shift is the place of the state. Whereas older organizations and programs tend to observe the state as both a proper and central political authority – and improving society largely is conceived to occur through making changes to or through supporting the state and its policies – more recently founded organizations have a much more ambivalent relationship to the state. They often act without any reference to the state at all, or the state is but one authority amidst – but not above – numerous political authorities. Rather than seeing the state as a centralized, singular political authority, what many research participants discussed is a political landscape in which the state is diffuse or not in consideration at all. What this analysis suggests is, potentially, a shift in the imaginaries of state authority which has been developing since the mid-2000s or, at the very least, the limits of such imaginaries within one segment of society, that of development (techno)media. This pattern is strong; it permeates nearly every example within the sample, suggesting that the cocktail of institutions which comprise development is not only becoming more complex but that the state's role and authority, or the authority it is perceived to have, is undergoing a drastic shift. The second component to the larger social reordering embedded in these programs is that the target of reform has shifted largely from acting upon governmental policies and material entities in the world to reforming the practices of

citizenship and subjecthood themselves or, in other words, people and culture. I devote the next sections of this chapter to demonstrating these shifts.

Messaging the State

The state occupies a curious presence within the orientational universe – the missions, mandates, targets, funding sources – of contemporary development (techno)media. For a subset of organizations, the state is observed by project staff as a paramount presence: It is the backbone of politics and governmental processes. It is the overseer of development – or at least the main broker through which lasting development change must pass, reflecting a grammar of governance that has been evident since at least the colonial era and, depending on the regime and ruler, long before. In the discourses of these programs, the state is so significant that it is like one half of a binary, the other half of which lumps together all other actors and institutions present in the field of development. In such cases, programs of development (techno)media observe a political grammar that recognizes the state as both a singular political authority and the legitimate manager of development in India. The state thereby claims a notable presence within the organizational narratives of such programs and becomes an entity that is to be supported. Two organizations in the sample realize this support quite literally: they give briefings and recommendations to the state, or they service the state in other ways (e.g. by organizing events). I thus begin with these two organizations as I introduce the state-centric politics of some development (techno)media.

Timely Information for Development: Reporting to the State, Averting Miscalculation and Disaster

Because it is contracted by the government for a governmental program (the only such arrangement in the sample), CMS ENVIS offers a good example of a program that is built upon a concrete notion that the state is a legitimate and central political authority. As two of its managers told me, ENVIS was started in 1983 as a response to an informational conundrum when the Government of India anticipated a severe wheat scarcity based on media coverage from several sources. To brace for a potential food shortage and agricultural crisis, the central government imported a large amount of wheat only to find that their assessment of the situation – and the sources they had relied upon to make that assessment – had been incorrect. While there may have been local wheat shortages, overall the country's agricultural system produced more than enough harvest to satisfy the demand for wheat within India. And the imported wheat, as well as the budget used to purchase it, was ultimately wasted. To avoid similar situations in the future, what was then the Department of Environment proposed ENVIS, a network of organizations that regularly updates the Government of India on relevant information, as a planned governmental program. And so, as two of its managers described, ENVIS began.

ENVIS comprised 69 organizations, mostly NGOs and educational institutions, which regularly debrief the Government of India on environmental matters occurring within or relevant to the nation. Here I focus on one node of that network, CMS ENVIS Centre on Environment and Media (CMS, the Centre for Media Studies, is the name of the ENVIS node's organizational host). CMS ENVIS specializes in synthesizing environmental information within the nation's media ecosystems and then reporting that information to the central government and general public through daily and quarterly newsletters, original research papers, and an on-site archive of environmental films. CMS, founded in 1991, is not

confined to ENVIS activities alone. Conversely, the Centre for Media Studies is a broad-ranging organization that has partnered with dozens of government, multi-lateral, media, and corporate organizations as it conducts programs that are similarly wide-ranging, such as assessments of development programs in water and sanitation, a large annual environmental film festival, annual corruption reports, and media guides and analyses (see www.cmsindia.org). Here I focus primarily on its work within the mandate of the ENVIS program, which commenced in 2000 as the Ministry of Environment and Forests enlarged the ambit of ENVIS to include additional topical nodes.

CMS ENVIS fulfills its directives primarily through compiling coverage of environmental issues by India's major daily news outlets and circulating these media summaries as an electronic newsletter and on its website, both of which are accessible to the public. A small team at the organization compiles these news summaries and disseminates them by noon everyday, but they also can be accessed through the online media archive maintained by the organization. Additionally, the organization releases quarterly newsletters, called the *Green Voice*, which are often themed in timing with major policy or political events important to the central government, such as the newletter's annual coverage of COP, the Conference of Parties and international decision-making summit of the United Nations Climate Change body, in anticipation of each year's meeting. Printed as short magazines, each issue ranges from 20-40 pages. Nonetheless, issues of *Green Voice* are quite complex in their structure and contain research papers, columns, samples of influential or popular media coverage, profiles of NGOs and individuals, interviews, website links, summaries and analyses of media coverage, and updates on newly released environmental films and books – all related to the issue's theme. CMS ENVIS staff maintains an online database, which

contains its daily syntheses and quarterly newsletters, and they also house an archive of

environmental films in their office.

    While much of CMS ENVIS's activities are based on compiling and re-circulating

environmental media, there are a few moments when the organization itself narrates or more

actively frames environmental information, particularly in *Green Voice*. In these moments,

the organization's writing often advances framings promoted by the state. In the sections of

the newsletter where CMS ENVIS provides original writing, they are often laudatory of

government institutions and largely do not deviate from state discourse on the issue. For

instance, in its issue on *Swachh Bharat* (January-April 2017), a marquee policy of the Modi

administration, CMS ENVIS frames *Swachh Bharat* in a wholly positive, if not gleaming,

manner. It introduces the sanitation policy package as "a movement started by Prime

Minister Narendra Modi and central government which aims at cleaning the waste and dirt

around our schools, office and homes through voluntary service by all the countrymen"

(CMS ENVIS 2017). The newsletter, while at times explaining India's sanitation problems,

discusses the policy as a patriotic mission in which all should take part, often using explicitly

moral language:

> People from different sections of the society have come forward and joined
> this mass movement of cleanliness. From government officials to jawans,
> bollywood actors to the sportspersons, industrialists to spiritual leaders, all
> have lined up for the noble work. Millions of people across the country have
> been day after day joining the cleanliness initiatives of the government
> departments, NGOs and local community centres to make India clean.
> Organising frequent cleanliness campaigns to spreading awareness about
> hygiene through plays and music is also being widely carried out across the
> nation" (CMS ENVIS 2017).

Green Voice's jubilation over *Swachh Bharat* similarly draws distinction to the sanitation

initiative, and thus the administration of Narendra Modi, by characterizing the nearly

identical sanitation campaigns of past administrations as failures. One newsletter stated that "The earlier governments too have tried to exercise similar sanitation drives like Total Sanitation Campaign (Nirmal Bharat Abhiyan), however, not much success has been see[n] by the earlier projects" (CMS ENVIS 2017). Elsewhere in the issue, CMS ENVIS continues to feature content which enthusiastically endorses the policy without critique: an extended interview with a government official about the program, updates (and photos) from celebrity brand ambassadors, and descriptions of what the policy aims to achieve. Indeed, some content criticizes those who have been less than supportive of the policy, as in one article which highlights various celebrity activity in the issue: "The Bollywood diva Priyanka Chopra was also nominated by Narendra Modi to join the bandwagon of Swachh Bharat Abhiyaan. Unlike his [her] Bollywood co-stars, Priyanka hasn't accepted the nomination and not joined the Clean India Campaign. On one hand, the real Mary Kom [a female boxer who Priyanka Chopra depicted in a 2014 film] took to the streets to join the sanitation drive, while on the other, the reel Mary Kom failed to impress" (CMS ENVIS 2017b). Rarely, the issue includes critical reflections on *Swachh Bharat*, but only in two articles featured in the "In Black and White" section of the issue, which the newsletter describes as containing "the leading environmental news coverage in the print media." Though not completely bereft of government critique, when the framing or narration of issues is fully controlled by CMS ENVIS, they render those spaces to the amplification of discursive constructions advanced by the central government.

As a governmental program, CMS ENVIS reports directly to the state (to the Ministry of Environment, Forests and Climate Change), is evaluated by the state, and, as such, tries to perform well on the state's metrics for fear of losing their contract. Both its managers were

proud that the Ministry had given them "A" ratings for four years in a row, thus rating CMS ENVIS as "having [one of] the best centers" in the larger network. This rating is based on a combination of factors: how much material and news is uploaded on a daily basis, the quality of the quarterly newsletters, web analytics generated from the government's statistics (not from other sources, such as Google's software), and a third-party evaluation of the program's website. To continue to cultivate top ratings meant satisfying a recent Ministry recommendation for "value-add" – placing greater emphasis on research and analysis in addition to amassing a repository of environmental media – as well as continuing to strive for greater numbers of daily uploads and unique website visitors. To help create more "value-add" (i.e. research) within the center, the two managers discussed plans to bring experts to the center who they specified as "the senior people. … very close to the Ministry [and] … academicians. So they know the trends, what kind of information they need." "Value-add" was also conceived as trying to cultivate more discussion among CMS ENVIS audiences. These plans, and the managers's several references to working according to "[Ministry] committee instruction" made it clear that they closely tracked the work of the center along the parameters of the Ministry's approval and feedback.

The state was more than a funding source and evaluative authority in the narratives of CMS ENVIS's managers. They articulated how it was difficult to accomplish what the Ministry asked of them with their annual budget and also that it would be virtually impossible to acquire more funding from the government. CMS ENVIS, they said, operated off of an annual budget of ₹25-30 lakhs, roughly $36,000-$43,500, half of which came from the Ministry of Environment and half of which was self-funded. This was the median budget size for similar programs in the research survey. But, small budget and large task load aside,

they said that they fulfilled their ENVIS duties as a matter of pride: "getting some resources, getting some funds from the Ministry is a very difficult and tedious job in India. A lot we are giving for this program. But we are working for the government. It's pride – that's why our organization is doing work on this issue."

Indeed, notions of state and development come bundled together within ENVIS: Its two managers described the CMS ENVIS program to me, saying that they emphasized the importance of the state to development more generally.

> [ENVIS] provid[es] environmental information to decision makers, policy planners, scientists and engineers, researchers, workers, etc. … This is basically a centralized, computerized network of database systems consisting of the focal point located in the Ministry and the chain of our partners, known as ENVIS Centres, located throughout the country. … They [ENVIS centers] work in the particular field that helps the policy maker to make the policy and decisions, and to advise the government doing the further development of our country.

This description of ENVIS not only places the environmental media synthesis center as supporting the government through a regular and comprehensive supply of summative information, but it also locates the charge of national development as the responsibility of the state.

Such statements which place the state as the natural bearer of political authority, and authority over national development, are not only confined to CMS ENVIS, a program created and funded by the central government. They are also reflected in the orientations of CMS overall. On the ENVIS website, CMS categorizes itself, outside of its ENVIS activities, as an independent non-profit organization which conducts research-based projects that "enable policy makers to take informed decisions on development and social change to improve quality of life." CMS similarly emphasizes, and publicizes, government affiliation in its own organizational website design, which includes quoted praise, largely from

government officials, throughout its pages (see cmsindia.org). These instances show an organization which locates the state, through its many departments and webs of policymakers, as executing national development and social improvement and itself, CMS, as playing a supportive role to that work.

The main charge of CMS ENVIS is the daily circulation of relevant environmental media to the central government, but CMS staff found that policymakers and government officials did not make for the most attentive audiences. When government officials actually needed particular information about environmental media, they would more often contact CMS ENVIS directly with a question than monitor the organization's ongoing media summaries and analyses. For this reason, CMS ENVIS would often reach out to other segments of society. When I asked them about their target or ideal audiences, one manager described going beyond the government, saying:

> The young generation. Among the registered media and journalism colleges which are there, the class 10 students are there. They must understand how the environment is doing, the importance of the environment in our society. So we are target[ing] toward basically that kind of person, because all of the policymaker kind of person, they are aware about this [ENVIS]. They are very particular with what kind of information they need, and whatever information they need, they just send a mail to us and we will reply accordingly.

Similarly, toward the end of our interview, one of the managers began to tell me about the importance of libraries as devoted spaces for the study and accumulation of knowledge. After our long discussion of the many online offerings of CMS ENVIS but as we sat just a few meters away from the large, though seldom used, film archive hosted by the institution, he said,

> I believe that library is a place where you get an atmosphere. And there must be availability of all the kind of things for basic utility, that must be available in the library. That kind of traditional library where books are all stacked there

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and then the people are working there. Now, I prefer if the library has some small cafeteria, that is also good. People need– After some break, they need some coffee, some tea. Then they just come back, and I think that atmosphere is the most important.

Even though its mandate was to disseminate information to government officials and primarily through the Internet, the organization simultaneously cultivated other audiences and formats of information dissemination in spaces where it could.

CMS ENVIS demonstrates a project of information dissemination, meant to keep those who govern knowledgeable on matters required for sound policymaking, which seems to have outgrown its original purposes. Government officials know about the program and simply initiate contact when needed, and even the Ministry's recommendations for the program include expanding the website's public reach. In the space of providing a daily informational infrastructure for the government officials, who may or may not utilize it, CMS ENVIS cultivates audiences and knowledge practices larger than its mandate – with schoolchildren, with the researchers who come to its documentary film archive every few months. Yet these expansions do not shape the program; they are rather "value additions," even if highly fulfilling ones, to CMS ENVIS's existing commitment, which is to support the state.

Several other programs in the sample that do not contract with the government, describe their work as upholding a similar set of relations. They locate their work, or at least a major part of it, in servicing the government in its charge of doing development. Even though it is not funded or contracted by the state, as CMS ENVIS is, the India Water Partnership (IWP), founded in 2000, exemplifies a similar dynamic. The organization was

founded as the South Asian node of an international network of development organizations focused on water, a program initiated jointly by the World Bank, UNDP (the United Nations Development Program), and a Swedish development association. It oversees a network of water NGOs and researchers within India and acts as a kind of broker between these entities by, for instance, initiating contact between two relevant groups or facilitating stakeholder meetings over contentious water policy issues.

"Knowledge," for IWP, could be quite wide-ranging: It could mean a kind of social knowledge of the water sector as IWP made recommendations of individuals or organizations when organizing conferences or policy events. It could also refer to the reports, documentaries, conferences, or workshops – so-called "knowledge products" – regularly produced by IWP which were meant to enhance the knowledge of those who consumed or took part in them within India's national development apparatus. Finally, knowledge referred to a general, though rare, expertise held – and highly guarded – by the organization that enabled it to do its work (i.e. producing "knowledge" in the form of documentaries and reports, enhancing policy and process by organizing conferences and workshops, connecting relevant actors within the water sector, and gatekeeping certain events and discourses from certain actors and standards of information).

Though the India Water Partnership was created to fulfill a number of duties with a diverse set of actors, it defines itself as, foremost, working to support the state as it devises sound policies and as it implements development programs for the nation. According to its website, http://cwp-india.org/, the organization is tasked with many responsibilities, including the scientific and holistic analysis of water-related issues, enhancing the public's awareness of water issues, supporting the government in its implementation of water policies

(though "as an independent voice…outside the government's ambit"), ensuring India's participation in events associated with the international network, and even "function[ing] as the water sector's national voice by promoting dialogue and exchange of information." Despite these wide-ranging activities, the director, whom I call "Dr. Rani Kothari." prided herself on the close relationship the organization had been able to cultivate with the state over the years. This relationship had included assisting the Ministry of Water Resources with the organization of national conferences, international speaking engagements, and submitting recommendations for national policies to various ministries. Indeed, from the beginning of our interview, it was clear that supporting the state was seen as the most important of the organization's charges, as Dr. Kothari articulated when I asked if the organization had any target audiences and, if so, who they were, "Our main target audience is first of all policy people whom we can influence and who are going to involve us, because as a think tank, they involve us in the policy reforms. We also target the policy people, the government officials, the state government officials, because indirectly whatever we are doing, who is the taker of these actions? The government. We suggest that these are the policy perspectives. Now this is up to the central government or the state government to incorporate or to further have a dialogue. That is our role. Number one." Similarly, she explained that invitations and written praise or acknowledgement from the government was one of the India Water Partnership's highest measures of success.

Throughout the interview, the director articulated the organization almost entirely through its association with the government. This started early in the interview, beginning, first, with the director's descriptions of the organization's many associations to people within various ministries of the government (its board members, past presidents, vice presidents).

Then, when Dr. Kothari discussed the organization's work, she prioritized and reflected at length upon the many instances in which the organization had supported the government through organizing conference and speaking engagements and offering policy recommendations. Contributing to the government's events and policies was not the only work the organization did, of course. The director also described assisting researchers, from universities in India and abroad, and conducting research and awareness generation activities, such as documentary films. However, these tasks were mentioned often in passing and certainly after the long, more extensively explained descriptions of the organization's work with or for the government. Sometimes they were later contextualized as to benefit, foremost, governmental policymakers.

The work of supporting the state, and the relationships cultivated while doing that work, were described by the director in language that was infused with honor and status. She, along with another senior member of IWP, continually emphasized the high status of the organization's governmental liaisons. To show how well-regarded the organization was to the state (and, inadvertently, how well regarded the state was to the organization), Dr. Kothari would frequently read aloud past email exchanges with officials who held what she described "the biggest post" or who were "all senior people." The naming of the officials of such high ranks, in association with the organization, was an exercise which placed the organization within the same genealogy or rollcall of honoraries as those with "the biggest post" and "all senior people."

Though itself an NGO, Dr. Kothari claimed an exceptionalism for the India Water Partnership, as she pointed out "that the India Water Partnership is the only NGO in the organizing and technical committee in the India Water Week [a conference organized by the

Ministry of Water Resources]. The single NGO. All are government or public sector." In Dr.

Kothari's characterization, IWP was one of the only non-profits to have such a close,

mutually respectful relationship with the government. Throughout the interview, the director

continued to attend to the exceptionality of the India Water Partnership from other NGOs –

she emphasized that it was transparent and disseminated "right knowledge" which was based

on evidence and research, unlike NGOs whose information was often unreliable. This

emphasis on "right knowledge," which was often based on associations with or sourcing

from "all senior people," was deeply entwined with the organization's relationship and duty

to the government. As the director explained:

> Government does not recognize NGO, and NGO does not take government
> seriously. Because there is a mismatch. Why? I'll tell you. In the Central
> Water Commission, all are engineers, highly qualified people, but they don't
> have the social background, so they don't understand. My point is that if NGO
> makes a very general statement, that government doesn't like at all. That's
> why I was hinting toward you about [another knowledge dissemination NGO],
> the government doesn't like [them]. They don't regard them – what is [their]
> authenticity? Who's authentic[ating] this information? If [name of person] is
> contributing an article or [name of person] is contributing an article, who have
> read it? Nobody. … Our role is very, very different. We do little work, but
> very cautious. We have to be very cautious, because government is also
> involved. We cannot write substantial statements, we cannot give substantial
> statements. Like, we are involved in transboundary dialogue, interlinking of
> rivers. But we give the scientific opinion, why it is to be supported, why it is
> not to be supported. Clear-cut justification. We cannot say this will happen,
> you know, an NGO kind of approach. You know, you come up [with things],
> just brash, and then you don't have the sound science, sound policy
> background. That is my hindrance. That is why we are very cautious, because
> we are telling, first of all, we should also respect our government. Not where
> they are doing wrong, we will tell them, no, this is not the way, it should be
> this.

Purity of information, which could come from many disciplines (e.g. history, social sciences,

natural sciences), was intrinsically linked with a kind of status that derived from reputation

and affiliation or position rather than its content. After mentioning the names of several

researchers or public officials who the organization was likely to include in their public events, people who the director indicated were "well-known in the government," the director explained that without heeding such prestige, it would limit its influence and reach: "when we talk about them, when we invite them, when they lead the sessions, people have a lot of buy-in, because if you are having that kind of knowledge, that kind of aura, that kind of linkages, then people will come. Otherwise, if you organize a simple meeting, nobody will come. Nobody will come, but at that moment, the people who are coming are of a similar kind of stature." A known, honorable network of names and associations was thus a necessary currency through which the organization had to work if it could maintain audience with governmental contacts. But, as Dr. Kothari herself criticized the approaches of other NGOs as brash and over-generalizing, she made clear that IWP values and validates this system of rank as well.

Honorary genealogies and affiliative networks such as the ones emphasized by Dr. Kothari were essential exactly because the organization locates the state as the central political authority under which India's development apparatus operates. Wanting to be influential within that system, the director had found it necessary to tend to the organization's own rank and prestige, largely through further fostering its connections to "all senior people" and through practicing a discretion that such connections desired. The India Water Partnership's close, supportive relationship and discourse surrounding the state was indeed unique in the survey sample, but it was not the only to centralize the state within the field of development and its own ideas of impact and success.

Several other programs also keep the state at the heart of their work, but instead of serving and supporting the state, these organizations treat the state as a target of public

critique or influence. Though they differ from CMS ENVIS and the India Water Partnership's high regard for and constant tracking of state approval, these approaches share an important assumption: that it is the state and its policy machinery which are the means through which development or broad societal improvement can occur. Discourses that are highly critical of the state also paradoxically assume the state's authority within national development as largely legitimate and singular. I now turn to another organizational network, the Revitalising Rainfed Agriculture Network (RRA Network, founded in 2007), which seeks to shift government policies towards better supporting rain-fed agricultural practices, to briefly exemplify this political grammar. During our interview, the director emphasized making an impact on the government:

> For us, we write down the targets or the success indicators, as we need to bring in some blatantly visible policy changes in the government. There are three aspects to this. One is investments: Bring in investments on the articulation that we are making. Second is we bring in some policy changes. Third is that you contribute to setting up institutional mechanisms. So these are the three things that we mean by policy advocacy. So, our indicator is whether we are able to change the guidelines of the [government] programs and bring our articulation into those programs is something that is related to policies. And whether we are able to bring government investments, specific government programs started off on the articulations, that is the investments side of it. The institutions angle: whether the existing systems of delivery, systems of managing things, whether they have changed to come to the interests of the [network]. So those things we look at. We may be successful in funding farmers or in a cluster of farmers, that is not our indicator. Our indicator is – and our strength comes from there – our aspiration is to actually bring change at the government level, the policy level.

Though the director described the process of influencing the state as a long-term, often tenuous process – made on the basis of well-established personal relationships and a great deal of consideration of each official's circumstances – making changes within the structures of the national government, in its programs or policies, as opposed to improvements to

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singular groups of people, clearly oriented the organization as it formed its goals and pursued its work.

Several other programs keep the state central within its aims and work in much the same way – striving for what the director of the RRA Network called "blatant visible policy changes" and to influence state institutions and their procedures. However, these organizations pursue these goals through critique, such as two largely journalistic operations within the sample (founded in 1992 and 1999 respectively) and another that engages in highly publicized campaigns to alter water policies (founded in 1983). Unlike other organizations, which observe a political grammar which supports the state or works, through research, personal relationships, and/or pilot projects, to diplomatically wager change, these organizations seek to alter government policies, and thus society, through highly critical and public demonstrations.

Down to Earth is a well-established and widely-read environmental magazine in India (its publisher claims that it is read in every district in India) that publishes research on environmental issues from around the world. During my interview with three of the magazine's editors, the editors emphasized policy as a main locus for generating greater societal impact. Two of the editors discussed how most cover stories had generated visible impacts and that after certain studies – on, for instance, the level of antibiotics found in chicken meat, pesticides in sodas, and vehicle emissions – were published, "a lot of things have happened after that, a lot of policy." They frequently mentioned policymakers as a core component of their readership and that they had sometimes received statements from Ministers saying that s/he would work on correcting the problems revealed by the magazine's articles.

The magazine's chosen language, English, also exemplifies how centralizing the state

as both a target audience and marker of impact can influence various aspects of the

organization's work:

> LV: Do you publish in Hindi or other languages as well? Or is the magazine
> only in English?
> E1: No, it's only in English.
> LV: And why have you decided to work in that linguistic mode?
> E2: I don't know whether I am right or wrong, but the idea was to influence
> policy decisions at the top. We presumed that a lot of people were there, they
> would have this language. Because the South of India, the rest of India, maybe
> that wouldn't be the case.
> E1: The policymakers are a big chunk of our readers, so we need to reach out
> to them. That's one reason.

Down to Earth is a good example of an organization, like several others in the sample, that

submit their communicative labors to an old poetics of political change which journalism

(and gossip) have relied upon for centuries: discovering and then publicizing shame-worthy

information about an empowered person, policy, or process, which then invokes a direct and

transformative response by those with political power. In this case, as its language policy

suggests, that political power is the state and its larger policymaking apparatus.

Another organization that focuses on rainwater harvesting and river rejuvenation,

conducts broad campaigns on water-related issues, aiming, ultimately, to influence state

discourse and policy. In existence since 1983, the organization has focused, in part, on

environmental education programs for children and journalists and builing a large, tiered

national network of allies and volunteers. Through the organization's educational outreach,

its executive director, Vinay, estimated that the organization had cultivated approximately

5,000 volunteers and allies at the national level and 25,000 at more local levels across India,

people who they could call upon when the organization entered what Vinay called "campaign

mode." Most recently, the organization has utilized awareness campaigns to bring rivers,

especially the Ganga and its pollution, into national spotlight:

> V: If you read Indian newspapers and watch TV, you'll find somewhere that
> rivers are getting some place. We've been working from the last 10 years.
> What it took? It's taken that last 10 years. We also used these elections as an
> opportunity, as a tool. If you use these issues as a cause for votes, the
> politicians will get attracted to it, because politicians get votes from the
> people, and if we create something in front of them, then people will get
> votes, then definitely it will come in the limelight. So it's also a strategy.
> LV: So what work do you think it took to bring rivers to this national level
> that it is now?
> V: Actually many things worked, we've been working in the last 10 years. We
> had regular meetings, regular conversations where there's top officials, top
> publications, and during the elections from the last couple of years, we were
> traveling so much in the river Ganges area. So that River Ganges, that means
> we were doing *yatras* [in this case: long-distance, highly visible marches]
> and… Now Ganges is one of the hottest topics in Indian–
> …
> LV: So how do you measure your impacts? Or how can you tell whether what
> you're doing is successful or not successful?
> V: When you get results, it's obvious that you're successful. Now where we
> were working, top officials and top politicians, now they are thinking of the
> Ganga, they are making policies of it. It means we are successful. Campaigns
> take time, campaigns take time. And believe me, creating awareness is a
> lifetime job.

Vinay omits reference to the rise of Hindu nationalism within contemporary electoral politics

in India and the importance of the Ganga, a deity and sacred river within Hinduism, to it. He

similarly obscures the other historical moments when politicians have claimed Ganga

restoration for political merit or promise (see Alley 2002 for one example). And even though

he glosses the campaign work of the organization under generally creating awareness, the

apex of these activities is clear: politicians, state discourse, and national policies. These

organizations show that critique does not necessarily function to dismantle the state's

authority. Conversely, by viewing policymakers and governmental officials as the key

audiences of their work and measuring the changes within government policies and

institutions as paramount to their missions, such organizations rather uphold the state as the central political authority and proper manager of national development within India.

The programs that I have discussed in this section are among the oldest in the sample. They include two programs that pre-existed economic liberalization, a Gandhian rural development and education program and a state-contracted information dissemination system (ENVIS), programs which have etched themselves in long-standing traditions of Indian nationalism. Most of the programs discussed so far also exemplify class dynamics which have long been present in civil society in which middle- and upper-class, often English-speaking, elites band together to influence public culture and state policy, often while claiming to represent the welfare of the nation. What I have emphasized about these otherwise highly variable programs is a shared political grammar that remains committed to the idea that the Indian state is the principal authority and manager of national development. In the next section, I demonstrate how the operative political grammars within development (techno)media, or their relationships to and conceptions of the state, are changing distinctly from programs forged during earlier periods.

The State Decentered

Outside of the organizations discussed above, which include five of the oldest six organizations within the sample, the state is discussed very differently. It is not the principal authority or proper manager of development. The government rather is discussed – indeed, when it is discussed at all – as one of many political authorities and managers of development or a source of assets that can be used instrumentally to improve a privately funded development project. These organizations, which comprise most of the organizations

in the sample (24), not only discussed the state and their relationship to it quite differently than the organizations analyzed above, but the state's presence during our interviews often occupied significantly less conversation time. As in the previous section, I begin this discussion by profiling one organization that exemplifies this newer, state-decentered politics.

Films for Development: An astrophysicist, Microsoft Research, and the hero-farmer

TechFarmer is a non-profit organization that has tasked itself with unpacking the black box of a recent development obsession, behavioral change, and does so by disseminating and tracking information about agriculture and health among small-scale farmers in India and Africa using short films. Their programs are often in partnership with national governments and operate with funding from international donors. They run as follows: An international scientific committee determines the core messages that TechFarmer will ultimately communicate within its different regional programs, and these messages could be anything from encouraging the use of a certain ingredient for low-cost fertilizer, instruction on how to build a pit for growing rice paddy, tips for creating the most sanitary environment for household livestock, demonstrations of milking techniques, to stories about proper hygiene in the household. TechFarmer then coordinates with a local health or social worker partner and video production team, who they have trained and hired. These local partners then take the basic messages designated by the scientific team and flesh them out with more details and plotlines, building them into plans for videos that will be meaningful to villagers nearby. The film production crew, having had training in storyboarding and video editing, films the short videos (3-12 min) over a few days. Film production teams experiment

with different plot structures, often utilizing the structure of a fictional story in which a beleaguered farmer or family gets advice from another farmer who has more efficient or successful techniques, a documentary-like how-to scenario, or even a serial drama. Regardless of the plot structure, however, each film must clearly convey the message of the scientific committee in local languages and with people (often known to the audiences) in the village. Later, an extension or social worker shows the films at women's self-help group meetings in surrounding villages, each of whom owns their own handheld projector (originally supplied by TechFarmer). During these screenings, the extension worker tallies the individuals who like the video at the meeting, facilitates a discussion about the film, and answers any questions. Sometimes women watch the video multiple times. Finally, follow-up researchers will survey the households whose member were exposed to various messaging to record the ratio of people who actually adopted the practices promoted by the films. To encourage adoption, TechFarmer also runs what they call Farmerbook, an online platform much like Facebook that profiles farmers, but it operates with a twist – those who adopt more of the practices promoted by TechFarmer or who assist others in practice adoption are preferenced in Farmerbook's feeds and ranking algorithms. To date, according to their website, TechFarmer's messages (and follow-up reception research) have reached total of 1.4 million farmers in India and Africa. A program manager, Advik, explained the benefits of the model as follows:

> So, if you're sitting in some remote area in California, you can know in each particular village what's happening to each farmer. We also developed something we call Farmerbook, which is nothing but a kind of Facebook for farmers. It's not really a Facebook but it basically provides you history with the picture of a farmer, all the videos this farmer has seen since the beginning whenever they got involved and which of the practices the farmer has adopted, which practices the farmer has said he wants to adopt, what were the questions the farmer has asked, which practices he has not adopted. And since

this viewing of these videos is done in a group of 20 to 15 people, then you also have data as to who has adopted first, who has adopted later, and then how the particular practice was adopted within that social network. So that gives you a lot of data on how behavior change is happening in a typical rural micro-setting.

At the core of TechFarmer's founding story is a heroic tech figure, Tejul Shah, an Indian American who, after embarking on a promising career as an MIT-graduate and astronaut in the U.S., chose to leave that life to "do something for the farmers," as Advik described. The story is strangely similar to a 2004 Bollywood film starring Shah Rukh Khan, *Swades*, in which a highly successful NASA astronaut returns to his ancestral village in Uttar Pradesh. Khan, in the process, becomes enchanted by village life and by a particular childhood friend (now turned beautiful woman) who runs a school and is deeply invested in improving village life. He decides never to return to the U.S. and instead devotes his life to rural development in India. The founder of TechFarmer, Tejul, describes his story of coming to start TechFarmer a little differently from Advik. During one presentation, given via Skype to a seminar at Emory University in 2016, which I attended, he described TechFarmer as beginning with reading many autobiographies of his personal hero figures, astronauts and finding that they often described a deep shift of values upon seeing the Earth from outer space. A literal shift in vantage point made many astronauts, according to Shah, begin to question why there is war and hunger on Earth, which seems so peaceful and extraordinary from space. Subsequently, as Shah devoted more and more time to development issues, he describes that his personal hero figures began to shift from astronauts to farmers. In full alignment with the formula of the tech entrepreneur hero story, Shah is pitched as a young genius who started the organization while in his 20s, and as someone who has the unique knowledge of understanding technology and how to apply it in diverse ways, such as the

"rural micro-settings" that TechFarmer targets. Technology is thus not merely the central instrument of TechFarmer's development programs, but it also indexes the larger moral and mythical repertoire common to tech figures, as evidenced by the way Shah is discussed *outside* of the non-profit, often appearing on lists of young people to watch in India or in the tech sector at large.

With an annual budget of over $10 million, TechFarmer is by far one of the most well-funded and internationally well-known organizations in the sample. Many people who knew about the ICT4D (Information Communication for Development) or Knowledge for Development (K4D) scene in India would independently suggest TechFarmer as an exemplary initiative which I could consider for my work, from professors to NGO representatives. Praised for its effective and accessible package of communication, behavior change, and accounting metrics, TechFarmer is recognized for not only bringing scientific recommendations to farmers and rural householders in local languages but also for getting many of them to actually take up those recommendations. Advik, TechFarmer's program manager who explained their program to me, also boasted about their metrics software, which can be used on and offline, to track views, likes, and adoption rates of various practices. Their metrics program runs so smoothly that government departments partnered with TechFarmer, he said, often replace their own software packages with it.

A particular confluence of development enthusiasms – for successfully getting people to change their beliefs and behaviors, for detailed performance metrics, and for getting digital technologies to work in poor or rural settings – make TechFarmer a stellar and progressive example for many who work within the field of development. Not all knowledge-based development programs centralize high technologies or the logics that accompany them (e.g.

open-access, online performance metrics), though TechFarmer does, but their use of

technology is not only pragmatic, it also comes with distinctly moral overtones.

The state is not absent, by any means, from the narrative of TechFarmer, as one

segment of my interview with Advik demonstrates:

> Because we are trying to service the poorest of the poor, and we also want to work at scale, we want to reach the maximum number of people, and we also want to ensure some degree of sustainability. So the best bet for us is to work with the government. That gives us scale. If the whole process get institutionalized into their system, then it gives us sustainability. … And then I think another thing that has worked is that we are not creating a parallel system. We are institutionalizing, we are creating out approach into the existing structures, of the government. I mean, one of the reasons why the scale [of TechFarmer] is big– like in Ethiopia they're planning to reach 6-7 million farmers in the next 5 years. It's all because we are partnering with government. And we are trying to improve and empower the government system and also institutionalize the support within the government.

Here, Advik describes the many-faceted relationship that TechFarmer maintains with some

governments. One of those facets is seeking out association with governments so to use the

state to "scale" a specific project or technology. While the state is not discussed as

instrumentally as in some other organizations, TechFarmer still presents their relationship

with governments in terms of its usefulness to achieve an end-goal, which is to "achieve

scale," or to reach as many people as who have need. Though referencing governments as

such emphasizes a relationship of instrumental use, it is not, terminology aside, terribly

different from the goals of organizations discussed above who seek to universally (or

nationally) institutionalize clean(er) rivers, rain-fed agricultural practices, or food free of

pesticides and antibiotics by influencing government policy. In either case, the question of

whether a government is a development authority and manager because it is big and

pervasive throughout society (and thus able to reach many people) or because it is what is

natural, right, proper, or moral is left unanswered.

Yet, there are key differences between the discourses of organizations such as CMS ENVIS and TechFarmer that suggest a fundamentally different understanding of the state's political authority within development. Even though TechFarmer positions themselves as "improv[ing] and empower[ing] the government system," their discourse of development – and conceptions of themselves and the state within it – differs strikingly from other organizations which observe a politics wherein the state is to be supported or its policies, altered. The government is not an ultimate goal or target audience; it is, instead, a partner and, at other times, a client, or, encapsulated in the statement that suggests TechFarmer "empower[s]" the government, yet another development beneficiary. Rather than one half of a binary, the state is but one other institutional actor – and one that TechFarmer approaches, at times, as an equal and, at other times, as a lesser authority.

Another key difference is that TechFarmer advocates for the government to adopt particular technologies – its metrics software and handheld projector-based dissemination model – rather than altering national policies to achieve a broad goal. As such, within the development of TechFarmer, governments may lend funding and legitimacy, but it is never described as the proper or singular political authority through which development occurs. It is, rather, a consumer and an infrastructure of mass-delivery of the programs, messaging, and technologies of TechFarmer and organizations like it.

Adoptions of various agricultural and hygiene practices aside, one blanket benefit many attribute to TechFarmer, which also appeared positive to me during our interview, is their successful training of many rural staff and partners in film production and computerized data entry. Further, many seem refreshed by TechFarmer because the program seems to actually offer what so many development programs promise but fail to deliver – the

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achievement of their stated goals and the distinct social changes those goals underwrite. And

they use technology smartly all the while – at low costs, offline, without literacy

requirements, and to be portable.

Based on my review of the organization, however, TechFarmer's communication

model seems deeply problematic. Many of its products privilege people with access to

technology and the Internet. It is, for instance, the person in California recalled by Advik

above (or anywhere else in the world, for that matter) who can, via the Internet, keep track of

each farmer reached by TechFarmer, watch the videos they have been fed, and monitor how

they react to that media. The farmer, who most often does not have Internet access, is,

conversely, never granted such power. Though rural audiences can certainly reject the

messaging of TechFarmer, the organization has done everything to subvert that possibility.

As research has indicated that the most trusted and accepted source of information for a

farmer was his/her neighbor farmer (a research finding, from Microsoft that significantly

influenced the very founding of TechFarmer, as Advik told me), TechFarmer has chosen to

disguise its messaging within the guise of local settings, local people, and local language.

And, to be clear, TechFarmer's messaging is the messaging of an elite body far removed

from the people and places it is meant to impact. In its close monitoring of development

subjects' behaviors and of government adoption of TechFarmer software, TechFarmer is

much like large social media companies in their covert and one-sided data collection (and

monetization) of user behaviors. TechFarmer affords itself, and sometimes Internet-savvy

onlookers (such as the person "sitting in some remote area of California"), a view of large

amounts of private data on the behaviors and beliefs of its audiences, who are unlikely able

to access, or make use of, such a view. In sum, TechFarmer may be too good at

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accomplishing its goals, for its program of disguise, delivery, and surveillance seem to come at the cost of quite a bit of privacy and almost all communicative autonomy for its audiences.

TechFarmer typifies many development initiatives in the sample in certain respects – in its specifically communicative development intervention, in its emphasis on utilizing digital technologies effectively for rural populations without Internet or smartphones, for instance, or in its complicated cluster of affiliations with select South Asian and African government bodies and rural networks alongside an elite, Global North funding base. And like most organizations in the sample, especially those founded after 2001, it has identified cultural practices and beliefs as the field of its development interventions. For TechFarmer, changing the daily agricultural and hygiene practices among rural farmers in South Asia and Africa, not government policies or infrastructures, is what will lead to a more prosperous society TechFarmer is one of the more extreme examples of the survey of a highly controlling approach that attempts to manage audience meaning-making and subsequent behavior at multiple junctures. But many other organizations in the sample share TechFarmer's target of culture and subjectivity, even if they go about it differently, such as through mediated stakeholder dialogues, education or training programs, or creating a spectacle around a "local champion."

Like Advik in his description of TechFarmer, many other interviewees defined their organizations or projects in relation to the government in ways which either downplay the government as the central political authority through which development change must pass or which utilize the government instrumentally, as an asset for their own aims. Such discursive configurations appeared often when open (or opening) data was a topic of discussion, such as for a team that in 2012 created a "water tool," an interactive digital map of water risk across

India. The team that created the tool comprised representatives from an assortment of large corporations in India, including beverage and IT companies, and facilitated by a staff member of the World Business Council for Sustainable Development, whom I interviewed for this survey. In describing the process of creating the water tool, she emphasized how the tool was designed by industries according to their needs, saying, "[industries] actually decided the scope of the tool, like what is the data sets we want, what is the format of outputs we would like to see in the tool. So the industry is actually building the tool based on their own need." During the design process, industry representatives determined that national-scale, preferably government, data was essential, so they appealed to the Indian government to lend data that was as yet unavailable to the public. The WBCSD representative articulated that it was challenging to get the government to share data but that the group "did build a trust factor that worked over time" and "did a lot of liaising with the government bodies" in order to get it. Though launched as a public tool that could have broad applications, the interactive water map was designed to cater to corporate users, particularly to equip them with the ability to see the amount, quality, and risk associated with water for their production purposes. Whether the social improvement made possible by the tool would occur from its uses among a general public or, alternatively, corporations, the government's role was simply to furnish data rather than respond with improved policies or other actions.

One ideological leaning present in many organizations in the sample is a mistrust of government. The National Knowledge Commission, for instance, in recommending web portals along with other new knowledge structures, suggested that most new initiatives be launched outside of government, because, the NKC maintained, the government already held an unhealthy monopoly on information. This way, wider publics could actively utilize and

benefit from such information. The Biodiversity Portal, one of the portals founded in 2008 as a response to the NKC's recommendations (and featured at the start of the introductory chapter), exemplifies this dynamic. Their managers did not describe obtaining or circulating government datasets but rather disparaged the state as the proper custodian of information. In our interview, for instance, one portal manager advocated against "big citadels," such as the government, "that hold information, like the [governmental] surveys and big research institutions and things like that but that are very cagey about giving up this information out or about putting out this information." The discourse, similarly, at the heart of the Biodiversity Portal suggests that an engaged, information-accessing citizenry is more important for achieving societal improvement – or perhaps simply improvement in biodiversity – than a large, centralized state.

Web portals and similar knowledge initiatives are convenient vectors for performing transparency, as their large and public acts of dissemination can affect impressions of comprehensiveness, wholeness, and universal accessibility. Another knowledge portal, which is run by the Government of India, defines itself entirely as a mechanism of transparency through which citizens can access large amounts of governmental data in the form of maps and also, according to the portal's manager, participate in governance should they have questions, disagreements, or policy suggestions based on the data circulated by the portal. Unlike CMS ENVIS, the only other program in the sample which is funded by and folded within the state's authority, the government's web portal did not define itself through supporting or servicing the state in its management of development but rather through its service in *displaying* the state as a transparent and democratically cooperative authority to the public. As the portal's director described,

we have a National Water Policy, and policy demands that accurate and contemporary information should be in the public domain so that you can involve people in the right decisions. The goal is basically to place the entire water source information system in public domain, so whatever the government desires to do, let people know that this is for this benefit and these are the scarcity in these areas and this is the quality of water available.

Not only does the portal's director immediately place information and its dissemination as central to a democratic political system by choosing these details to share first about the portal during our interview, but the whole project is constructed as a kind of defense of the state's authority and legitimacy in its governance of water through publicly providing the information it has used to make its decisions.

Data was not the only thing that was discussed as being liberated from the government to serve the purposes of others, whether the general public or a small group of large corporations. Funding, acknowledgement, and other associations from or with the government were often highly valued among organizations as well. One example of this is a mobile phone-based community radio program, founded in 2008, that allows people to broadcast recordings of their voice. Also aired are paid advertisements from government, multi-lateral, and commercial institutions. In lieu of taking on the task of reporting grievances mentioned on air, the organization instead works to enhance the credibility of their volunteers through associations with the government. This way, should volunteers register a complaint with the state, they might be heard more so than if they had no government contacts. As Paavan, the founder, described to me, "what we've been able to do in some areas is that we've been able to introduce our volunteers to the District Collectors. So that sort of gives them that credibility, right? So if they go to the DC's office or they are trying to set up a meeting with him, the DC sort of knows who they are and the organization

has a certain amount of credibility that it is able to provide to them." Rather than petitioning

the state for development justice or corrections to its administration, as many of the oldest

organizations in the sample do, the organization instead presents the pathway of grievance

redressal as a choice that its volunteers can pursue. And while affiliations, recognition, or

funding from the government could lend prestige to organizations such as these, it did not

(re-)orient their goals or target audiences as it did for organizations like the India Water

Partnership.

In many cases, governmental authority within development is elided as one of many

institutions who wield some authority within the field of development, along with, for

instance, large private philanthropic organizations, development banks, multilateral

institutions, key grassroots organizations, and even corporations. To demonstrate this

contrast with the high-tech, self-confident case of TechFarmer, I profile another organization,

the Foundation for Sanitation Solutions, which utilizes information dissemination to achieve

development goals.

Community-based Sanitation for Development: Moving to Knowledge from Implementation

From concerned citizens interested in sustainable design, masons, and engineers to

city planners, the Foundation for Sanitation Solutions (FSS) specializes in instructing a wide

variety of people in household or institutional wastewater treatment, fecal sludge

management, and sanitation planning for towns and urban centers. Before starting the

organization in 2005, the founders worked for several years to pilot and refine the filtration

methods they now advocate, and once having found long-term funding from a European

development organization, they commenced nearly a decade of installing their small-scale wastewater treatment systems around India as well as training others to maintain and install them. Confident in the efficacy and functionality of their methods and systems ("proof of concept," as it was referred to in our interview), the organization was, at the time of our meeting, shifting almost completely toward knowledge dissemination. Alka, the director of FSS's Knowledge Management division, explained that the organization now focuses largely on training programs and capacity building. They also share their experiences to other non-profits in the water and sanitation sector in India and internationally through conference presentations and research papers, and they have even installed a sanitation museum on their premises to demonstrate how their systems and methods work, where they have been implemented, and to what effects.

At the center of much of FSS's work is a physical system that must be installed and maintained. The system treats wastewater and is composed of several chambers, which together rely upon pressure, filtration by natural sediments, bacterial components, plants, and UV rays to purify wastewater to a state clean enough for reuse in landscaping or housecleaning. Though the system needs to be cleaned every several years, it is less expensive than similar bioremediation systems, uses no electricity or chemical inputs, and can handle daily wastewater inputs from up to several thousand people per unit, depending on the size of the system. In addition to these community-based sanitation systems, FSS has also facilitated the sanitation plans for numerous cities in India and Bangladesh, and they are also piloting various fecal sludge processing methods.

For FSS, knowledge dissemination is both about making the general public aware of the pressing sanitation problems that they likely face, arising from the nearly 80% of

wastewater which is released untreated in India ("78% of Sewage Generated in India

Remains Untreated" 2016), as well as widely spreading solutions to those sanitation

problems in the form of the treatment systems, sanitation planning, and training. Almost all

of FSS's knowledge-sharing work occurs through conducting training programs for masons,

engineers, government officials, development practitioners, and private sanitation service

providers. Their trainings usually last 2-5 days but can extend to longer periods. FSS caters

its training to the professional needs of each group and is equipped to run programs in

English, Hindi, Kannada, Telugu, or other languages with the assistance of a translator. In

2014, the Government of India, in coordination with the newly launched and rebranded

Swachh Bharat ("Clean India") Mission, designated FSS, along with only 35 other education

and civil society institutions in India, a Knowledge Resource Centre capable of training

government personnel in the topic of sanitation and associated technologies to better prepare

them for the work of Swachh Bharat. For FSS, like many development organizations, lack of

adequate sanitation poses grave problems to society, including illnesses, increased child

mortality due to water borne diseases, pollution, harm to larger ecological systems, as well as

costs (e.g. expenditures, missed work and economic opportunities, diminished natural

resources) associated with those problems. Their knowledge sharing work, Alka explained, is

the primary way they can help solve those larger development problems and at large scales.

In addition to its knowledge dissemination through training programs, FSS also

formally aligns itself with another approach to development: knowledge management. As

FSS began to plan to focus primarily on knowledge sharing rather than installation of

sanitation technologies, they started to look inward at their own communication practices.

Because of the high turnover rates of employees, common sector wide, important information

can quickly become lost to the larger organization. To prevent such ongoing lapses in institutional memory and to promote consistency in their trainings, FSS created several means to standardize their activities, as well as document and organize information important for the organization. Every activity, from the smallest and seemingly most inconsequential (e.g. coffee breaks) to the largest and most important actions (e.g. conducting trainings, writing reports), has a corresponding activity sheet that specifies the exact steps and pieces of information, resources, and time required for it. There are also several databases that all staff update regularly with information on personal contacts or project updates and data, and every person is trained to save their computer work according to a specific filing system hosted on the organization's server network.

FSS's move from "implementation" to "knowledge" organization is a transition that does not merely reflect a change in their primary work, but it is also a shift that is rife with other politics. "Implementation" organizations are often those which are responsible for the execution of a given development project, unlike other organizations in the development non-profit ecosystem, such as donors and funders, knowledge partners, technology partners, anchor or host organizations. Implementers are the final, "on-the-ground" representatives of a given development project who are responsible for installing the wells or the toilets or for making sure sanitation behaviors or perceptions are actually changing, depending on the charge of the project. As such, such organizations are often held responsible for deploying the location-specific cultural, linguistic, and ecological knowledge that would make the difference between a sure development project failure, often conceptualized in abstraction and far away from the ultimate site of implementation, and one that has some chance of succeeding. Essential as this labor and knowledge is, it is almost universally the most under-

valued work (in terms of monetary compensation and prestige) within development. "Knowledge" partners, conversely, occupy a more privileged status given that they are consultants in methods, technologies, or administrative approaches that either philosophically or methodologically define a particular development intervention. It is these organizations, rather than highly localized implementation organizations, which develop national or international reputations – and are able to cultivate the funding required to offer salaries that might entice professionals otherwise headed for private, for-profit sector jobs. FSS's transition to a knowledge organization has required growth of the organization, and to support their growing budget, FSS often conducts paid consultancies in sanitation treatment to national and municipal governments across Asia. In this work, as well as in their international conferencing, FSS often must combat the negative stereotypes associated with NGOs in order to receive adequate financial compensation and prestige. Alka thus described FSS's conscious aversion to the NGO label: "People think, 'Oh, NGO means you are not professional,' so we have to change that perspective. So we consciously say we are a not-for-profit organization, we are not an NGO. Because the perception is that NGO does not do anything which is good, so you have to fight with that." Going on, Alka noted that such stereotypes are sometimes leveraged to devalue the labor of FSS in their consultancy work and that the organization must continually disprove those stereotypes in order to claim what they see as fair compensation. "Also," she stated, "all the [while], you are a professional organization, and you are delivering quality. And for quality, you need to pay. You don't pay us what you would pay Ernst & Young, maybe, but you need to pay us for what we provide you."

Even though FSS is one of only two organizations in the sample that promote the installation of material infrastructures (albeit highly localized ones), they are a paradigmatic example of K4D and Knowledge Management for Development. Despite the pragmatism of FSS's informational model, which instructs others in methods for safely processing the waste of households and institutions, the organization also demonstrates how claiming knowledge as one's primary intervention in development can also be highly political. Labor labeled as knowledge work claims higher status and compensation than the implementation work popularly thought typical of NGOs, even if essential and also knowledge-based as it is.

The state came up several times during our interview, which lasted nearly two hours, but it was never much more than a potential customer, partner, or an arbiter of amplification or prestige. FSS had, for instance, a team that specialized in compiling sanitation plans for towns and small cities, and the organization had conducted training programs for government institutions and officials, both in India and outside of it. FSS's work also had been recognized and incorporated by the Government of India in its own sanitation training. But unlike organizations such as the India Water Partnership or *Down to Earth*, Alka mentioned the foundation's work with governments hand-in-hand with their work with others. After I'd asked about the target audiences for FSS's knowledge work, Alka responded, "Yeah, so as we are working in the sanitation sector, the two main categories are government and non-government, so it can be private consultants, it can be academic institutes, it can be architects, engine– you know, civil engineers, wastewater engineers or it's social scientists, social philosophy facilitators. So different categories of people. We also do training programs for masons." Training government officials required some tailoring from training programs that catered to other audiences, but FSS didn't necessarily see this work as more important or

impactful than the work they did with other audiences. Alka further elaborated about the conditions of government official involvement in FSS's trainings, again, on par with other audiences: "There's money in Indian government for capacity building, but nobody uses it. So it's like capacity building, [the] last thing to do. Or if they want a holiday in Bangalore, they'll come. From the government side, it's not a priority. From the private organizations, yes, they're– only if they're interested, they would come. So we do have to go and meet government departments, we have to go and talk to different groups of people like architects or engineer– civil engineer groups or people working in the sanitation sector." In part, FSS works according to evaluations conducted by its donor, a large non-profit based in Germany – which came up more than references to the state in our interview – and they did a fair amount of work which resulted from liaison through their donor's international network, including work for the governments of Afghanistan and Myanmar. But regardless of whether for the Government of India or another government, the state did not stand out as unique within the ambit of FSS's goals or target audiences.

Across organizations surveyed, it was quite common for programs to exclude *any* mention the state or government within their interview and otherwise described development and their work within it as if the state did not exist. One instance of this was a web portal based in the Netherlands, Akvopedia, whose portal is published in multiple languages (at the time of our interview, the portal was in the process of translating much of their content into several Indian languages). The two Akvopedia representatives who I spoke with did not mention anything related to government, formal politics, or governance during our interview.

Rather, the portal seemed to operate through liaisons with other non-profits and, occasionally, educational institutions.

Two other examples of programs that sideline the state in their politics are illustrated by a project management software program, which eventually split off into two initiatives because of philosophical differences. One, which made no mention of public policy, government, or governance within their description of their work, uses the platform to visualize performance metrics of funded projects for individual donors. In this case, the donors, who set several performance metrics for development projects hosted on the platform, and the platform itself act as the highest authorities of development. The other platform, Peer Water Exchange, though it is based on the same software, is designed according to very different goals – to support "on-the-ground" implementing organizations and exchanges of information between them. Its founder, Lalit, described the platform as, yes, bringing donors to fund water programs, but centered on the implementing organizations themselves, including processes of peer-review to grant project funding. He described the platform as a meeting place that would dilute the negative effects of donors on the water sector:

> Currently, you have a pyramid in the water sector. You have the funders and they may be the World Bank, UNICEF, WaterAID. And then the implementers, beneficiaries. And there's a trickle-down effect. It's a very top-down approach. Small projects are not visible. Accountability is lacking, and there's no collaboration. We really need to experiment to make it a four-winged butterfly. The funders are one wing, intermediaries are another, implementers, and beneficiaries are another. And, what are the problems right now? The information flow is mainly photoshop and quotes and streamlining and editing, right? And the financial flow is also hidden. You know, one implementer in Vietnam said, "The same project costs $400 per person if the World Bank funds it and only $100 for you," and I'm like, "Why?" Well, there are many reasons, but—They're all hidden, because you can't tell. And of course this butterfly cannot fly, so the way we structure Peer Water Exchange is, firstly, we have a body, so all of the funders are networked. All

these people are forced to collaborate because of peer-review. … You ask Why isn't this accepted? Because people with money and control don't want to let decisions be made by other things [people, processes]. The beneficiaries can be a part of the process – they can log onto the system, they can send SMSs, they can send– Plus, here the financial flow was tracked. You can see how much was asked, how much was given, everything is tracked. And the information flow is rearranged, so they can enter the system, and they can extract. All the information is completely visible – who has done, who has not done. And finally you have people – Rotarians, volunteers, photographers can go to any project in the system and say "I visited this, what are you talking about?" We are tracking those things, so that's the new [Peer Water] Exchange. So now, at least it can flap its wings, it may have a chance of flying.

In Lalit's model of development, for the water sector at least, he does not name the state as playing any role, significant or significant. Though, elsewhere during our interview, Lalit did mention the state, but he did so only in ways that emphasized the government as marginal. Not only was the government just another actor within development – and one which often made small steps within development unnecessarily complicated ("One Japanese government wanted three quotes for the price of cement in the local village. Where do you go? They get cement at one store. They don't even have stationary. Where do you get three quotes?"). But municipal government agencies were actually, at the time of our interview, the only organizations using the platform. However, for Lalit's vision for PWX, government agencies were not the ideal candidates for the platform, and as he vacillated in the interview between describing the platform as completely out of use (or being used by "nobody") and brief mention of its use by several municipal agencies to track the performance of sewage treatment plants around Bangalore, it was clear the state's presence in the project was not necessarily desirable to him at all.

Organizations such as the Peer Water Exchange, FSS, and TechFarmer were hardly alone in their use of a political grammar that decentered the state. Twenty-one other

programs in the sample also did not speak of the state as a central authority within development or in their own missions. This pattern recalls a claim made by Jeff Martin at the 2011 Bangalore Water Hackathon – that governments were becoming marginal within development across the world in lieu of corporations, private donors, and NGOs. When originally made, this claim seemed more a byproduct of its speaker's hubris than an astute observation, but it accurately summarizes discursive shifts occurring within development (techno)media. This is not to say that the Indian state does not play a significant role in these patterns, for it has passed policies which have facilitated the liberalization and depoliticization of the development sector, and by contracting with private development organizations as a partner and client rather than a managerial authority it has further submitted to these shifts.

From Reforming Structures to Subjecthood

The differences in political grammars observed among various organizations in the sample do not differentiate only on the basis of recognizing the state as the proper and highest political authority, but they also differ in how they construct the targets of their development interventions. Older organizations are also much more likely to center the state and its authority, and they often seek to accomplish external, material changes in the world. In the cases of the organizations in this survey, those goals include cleaning up rivers, changing governmental policies or obtaining certain rulings by courts, decommissioning a dam, or building rainwater harvesting structures in villages. During our interviews, organizations often illuminated the large, usually communicative and social, labors that supported these tasks: social organizing, liaising with new groups or publics to form a more

powerful political partnership, gathering volunteers, making public appearances, and cultivating relationships with people in the government and media who could help broker their cause.

The "new politics" and the communicative labors of the organizations that observe them, though they may also strive to achieve material objectives, are quite different from that of older organizations. These emergent politics are largely based on reforming the cultural practices of the individuals who the programs reach, an objective which does not exist among most older organizations. The logics contained in such culture campaigns advocate for a distinctly modernized, and often liberalized, subjecthood, though they do so according to various, sometimes contradictory, tenets. Quite similar to the principles on display at the Bangalore water hackathon discussed in Chapter 1, the centralization of technology, the rule of knowledge, self-accounting, and self-reliance are the logics which commonly drive the reformations of culture occurring within this sample of development programs. TechFarmer and its many campaigns striving for "practice adoption" among farmers in India and Africa, again, offers a good example.

Centralization of technology

Several aspects of TechFarmer's development program and philosophy demonstrate the shifting politics of development and the sense of modernized subjecthood which is now at the center of it. TechFarmer uses portable video projectors which can operate without electricity and its own behavior adoption metrics software which they hope to install within government departments around the world. Its international expert advisory board determines the practices which are to be adopted and where, and TechFarmer advocates for the rule of

expert knowledge while it centralizes technology, surveils, and tacitly shames its audiences. A similar case is the Digital Empowerment Foundation (DEF), whose programs both disseminate not only digital technologies but also a particularly intimate and everyday relationship to digital technologies throughout Indian society. The foundation grants awards to development organizations that pursue development using ICT, establishes rural Internet centers and servers, designs websites for NGOs, among other programs. Still another organization uses the medium of the mobile phone to reach and incorporate populations with low rates of literacy into a kind of digital community. Many other programs are only accessible on the Internet.

Across programs, digital technologies are seen as bringing efficiency and transparency to development. Advik, for instance, claimed that TechFarmer's "combination of technology and social organization has been shown to improve the efficiency of social workers by a factor of 10 times per dollars spent." In particular, they identify their software, which allows anyone with an Internet connection to monitor data on video reception, practice adoption, and even program evaluations – live – is largely what makes the program so efficacious. Though TechFarmer's ultimate goal is to increase the adoption of particular agricultural and hygiene practices among their audiences, their software technology helps them position the organization as having achieved, simultaneously, two lesser goals popular throughout development: greater efficiency and transparency through self-monitoring and performance metrics.

Similarly, another program developed and promotes an online platform for self-reporting project goals and progress for implementing organizations (the donor- and performance-metrics-centric version of Peer Water Exchange). Its program director described

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during our interview the four interventions the program's founder (originally, Lalit's donor and partner) sought to make with the online platform:

> There were four issues that he sort of gleaned onto that were important for him. Number one was that the sector was so fragmented. There were thousands of water organizations that were working on their own but not working together, so ideas couldn't be shared, learning couldn't be shared, and everyone is doing the same old thing, which is really the definition of insanity. He found that really frustrating as a business person. Why wasn't there more collaboration? Number two, he thought that there was very little accountability and transparency, because everyone did their thing. Maybe you wrote a report to your funder, but maybe it went in somebody's filing cabinet. Maybe nobody saw it, and who knows whether you wrote the accurate truth or not? So, he saw a need to do that. Number three, the need for impact metrics. You know, how do you really measure? And what are the common metrics everyone should have? Fourthly, how do you scale great ideas? If there was a great idea in the hills of Nicaragua that could apply to the hills of Malaysia, how do you get that idea out? Most organizations didn't go to conferences, and even if they did, it wasn't a very good way of scaling.
> So, he was like, "Okay, I'm in Silicon Valley, we have the Internet, the Internet is good for connection and education and scaling, so why don't we do something with that?" So he and another gentleman developed our first generation platform.

In this narrative, the Internet is an essential medium because of its ability to bring global connection, transparency, accountability, and thus efficiency to development.

But many programs were founded on or advocate for the idea that access to the Internet, other digital technologies, or even just information is a moral right and to which all citizens are equally deserving. The Digital Empowerment Foundation, with their large gamut of programs designed to expand the Internet and other digital technologies to populations who don't normally access them, embodies this principle most thoroughly. During our interview, one of the organization's program directors simply stated that their programs seek to "bridge the digital divide and remove information poverty from the country." Unlike DEF, many programs in the sample advocate simply that information is a development good that

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should be disseminated to all throughout society, as the founder of a mobile phone

community radio platform described:

> We started about 6 years back. We wanted to see if we could provide
> information to the rest of the people, to the bottom of the pyramid, so they can
> share information, they can voice themselves, and they can make themselves
> heard. The inspiration for this came from seeing how the social media in the
> developed part of the world had really changed things, like with Facebook and
> YouTube and all of these tools were being used for greater accountability, for
> transparency and everything. So we started with seeing how we could
> replicate these ideas in rural areas.

In these discourses, lack of technology becomes akin to the many other lacks that define the

condition of underdevelopment – lack of sanitation, healthcare, literacy. Indeed, the act of

targeting the unlettered or "bottom of the pyramid" and even the notion of an informational

poverty (a concept that was used interchangeably with economic poverty during one

interview and also referred to as "knowledge asymmetry") underscores the idea that digital

technologies and digitally disseminated information have become an essential component of

modern social citizenship in the world of development (techno)media.

Rule (and liberalization) of knowledge

      TechFarmer exemplifies another tenet by which development (techno)media often

attempts to remake subjecthood, what I call here "the rule of knowledge" or in other words

the primacy and authority of expertise. Again, I pull from Advik's explanation of

TechFarmer: "Then we also have a Technical Advising Committee at the national level,

which does content validation. We want to make sure that the content is locally relevant and

is....something that the farmers are willing to adopt, but we also do not want to romanticize

the wisdom of the farmer. We want to balance a kind of top-down, more scientific kind of

validation of these kinds of practices. So it's a group of scientists and practitioners who meet

and develop a packet of services and then they are adapted to different contexts." Local

context, for TechFarmer, is essential for making information dissemination believable and

trustworthy for its target beneficiary populations but does not contain valuable information

for the program's messaging. For that, global scientific expertise is by far preferred.

Though TechFarmer was designed to institutionalize scientifically validated

knowledge while dressing it up as local practice, many other organizations placed a similarly

strong emphasis on the importance of knowledge but sought to decentralize it. Take for

instance, a brief exchange that occurred at the end of my interview with the Biodiversity

Portal when I asked the portal managers to describe some of the end-users they knew about:

> RK: There's a photographer from somewhere. There's a farmer from
> somewhere who, you know, in all his waking state carries a camera in his
> pocket all of the time.
> LV: How nice.
> RK: It's very nice. His English is poor, but he keeps observing nature. He's an
> active contributor. He's one of the top twenty contributors [to the portal].

The farmer spoke little English but was otherwise a naturalist, photographer, and, through his

participation in the world of the Biodiversity Portal, a producer of digital knowledge. While I

have no doubts that RK was being truthful in his description of this particular end-user, it

also sounded much like an ideal moral type at the center of many development (techno)media

projects. In this ideal, or parable, RK describes the end-user through a mixture of terms that

are often used to index backwardness (working as a farmer, speaking English poorly) and

modernity (carrying a camera and using it to document the world, active contribution to an

online platform). Here, technology as well as the virtuous dedication ("in all his waking

state") of the farmer to nature and the portal are able to transcend the binaries of

backwardness and modernity. Indeed, technology, in this case, bypasses even language as a mediator of human connection, knowledge, and sociality.

Digital technologies are not always epitomized as a necessary vector of development within the programs studied here, but liberalization remains an important theme. ACWADAM, an organization that focuses on demystifying groundwater and hydrogeology, shows how knowledge without high technology is at the heart of the modern episteme of development and is made into a domain where many principles of economic liberalization can be replicated. Started in 1999 by a group of Geology faculty members at Pune University, one of its founders, Dhanush, described to me how the idea for ACWADAM began with, in part, frustration with the orientations of formal education.

> I began work as a Ph.D. student in the early '80s – '81 or '82 – I felt that a Ph.D. dissertation or even an M.Sc. dissertation or even postdoctoral research should have more meaningful impacts on human behavior, on community behavior, on change, on societal change. And, you know, at a certain point in time, we felt that universities should have an extension arm that looks at applied science differently from the way it looks conventionally at sciences purely from a science publication point of view. We struggled with the idea for a long time. Then finally one day I decided that we should seed this whole idea outside of the university. …
> The formal system is so very rigid that it is not conducive to change even though change is required. And let me be very candid about what I am going to say next, the problem with formal curriculum in India [is that it] does not take into consideration what society needs. It takes into consideration what the system can give to society. Or if there are a bunch of teachers, the curriculum is dictated by what the teachers teach and not what the student needs or requires. So it's a fairly philosophical level of change that you need to bring into the system. So what we decided was, rather than engage with an effort that requires too much of energy and we don't know where the effort is going to go, we will put our energies into developing a parallel, non-competitive course for a bunch of practitioners or anybody who wants to come and sit for fifteen days with us. We designed a curriculum, which is equivalent to the postgraduate curriculum of many of the universities in India, of hydrogeology. And we are delivering that curriculum over the last eight years now. Twice a year we run this 15-day course, and we've probably had about 2,000 people who have attended the course, some 200 organizations have been represented

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in the course, and we run it in an extremely demystified, bilingual, sometimes trilingual manner. Very flexible, very field-oriented, very-skill oriented. …
I think we have liberalized knowledge in a way not even envisioned anywhere in India. Also a part of this entire liberalization – capacity building, capacity enhancement, facilitation, hand-holding, all of this comes into play in this whole exercise. And we believe that this knowledge has given rise to some community empowerment. We are still not very happy with the degree of community empowerment. That's the next level we will work on.

In describing the origins of his organization, Dhanush maps out another ideal that resonates throughout the sample: that of informal, applied, adaptable – liberalized – knowledge. Dhanush takes discourses of economic liberalization and adjusts them to refer to knowledge and the exchange of information, themes seen in other development (techno)media as well. This discourse shifts the institutional degradation from the state as the manager of development through policy and program to institutions of formal education. In this informational paradigm, citizens transform into technical experts, and they do so through informal education self-directed by need and interest.

In its emphasis on producing a certain kind of subjecthood ACWADAM is similar to many other projects of development (techno)media. For the *Bangalore Examiner*, a media enterprise comprised of both citizen-journalists and professional journalists (and a project I discuss more extensively in the next section of the chapter), 21st century urban governance is incomplete without an actively engaged and perpetually informed citizen. Their idea of subjecthood is one that ascribes several responsibilities to citizenship, especially staying informed, investigating issues for which information is not clearly available, and, should it be required, placing pressure on civic bodies to alter plans and developments. The *Bangalore Examiner* has also specified the mode of discipline by which citizens should stay informed, investigate, and exert political pressure: journalism. This further suggests *how* people should or can observe their greater responsibilities of citizenship.

The *Examiner*'s vision of the citizen-journalist is hardly the only to place a modified

model for the citizen-subject at the center of its work. Many other organizations seek to

produce alterations to subjecthood generally. These can be signaled by designations such as

citizen-journalists, citizen-scientists, or para-hydrologists, labels that denote enhanced

knowledge and even agency if applied flexibly enough. But the production of certain kinds of

subjecthood can also be much more tightly controlled, as seen in TechFarmer, an

organization that does everything possible to create subjects who adopt and faithfully apply

the practices the organizations chooses. In these cases, the "knowledge" NGO takes on a role

expected of schools, that of cultivating a particular tenor of citizenship and the skills required

to sustain it. Such efforts to influence subjecthood are distinct from the oldest organizations

in the sample, which do not usually include such goals in their development aims.

The Tech Sector in Development (Techno)Media: Donors and Development Philosophies

In the 30 initiatives analyzed, references and links to high technology institutions are

pervasive. I had originally selected 11 programs with known links to the tech sector so I

could compare them with a selection of development (techno)media independent of tech

sector funding and political patronage. Yet, 12 additional organizations in the study turned

out to have funding, administrative, and/or discursive ties to high technology – that is,

approximately three-fourths of the sample. Only seven programs, the remaining one-fourth of

the sample, seem beyond the influence of a tech company or philanthropic trust. However, in

many of these cases, funding sources of development NGOs are so opaque – in publicly

available records and interviews alike – that it is likely that a good portion of these seven

programs have also been funded from tech sector sources. Regardless, interviews with some

of these organizations contained references to the tech sector as an indicator of success or

prestige for their programs, such as when, for instance, an IIT (Indian Institute of

Technology) acknowledges or seeks out their work.

But what do these references and links look like? Within this survey, the high

technology sector's relationship to development (techno)media is mostly one of provisioning.

This support, found across the field of development (techno)media, primarily takes three

forms: donations of money, services, or software; political patronage or public endorsement;

and the mythic capital I described in Chapter 1.

Funding, Services, Software

In the most obvious and clearest of cases, the programs and organizations are fully

funded, staffed, and sometimes even managed by a tech company or philanthropic trust, such

as the CSR department of Pearl, the large IT company discussed in Chapter 4. Only a few

organizations in the sample are so deeply entwined with high technology institutions or

philanthropists even if the programs themselves are carried out by staff members or

consultants who broker the program's media and daily labors. The remaining chapters of this

dissertation take a closer look at programs such as these.

Much more often, private funding from the tech sector occurs through grants, which

can develop into or are framed as "partnerships." Donors, though, are a special kind of

partner, for the gift of funding, as with most gifts, often comes with other expectations or

demands (Bornstein 2009). Donors have their philanthropic portfolios to balance, their

investment protocols, and their interests or philosophies can structure the field in which other

development organizations present or conceptualize their work. But this can also go in the opposite direction as well. While some organizations funded by the private wealth of tech entrepreneurs and their families or through corporate donations may maintain a relationship of financial donation and project reporting, occasionally organizations are able to build that relationship into something more. For instance, ACWADAM, which originally began as a grantee within a philanthropic trust linked to a prominent tech sector family. Over the course of several years, as a grantee it managed to grow this relationship into an extended partnership with the trust, eventually taking serious roles in guiding major programs for the trust in a topic of mutual interest. This particular partnership was formalized further as the trust hired an employee of the organization to permanently represent their specialization (hydrogeology) within the trust. This organization was able to utilize its rare but highly valued expertise – a hydrogeological understanding of aquifers – to strategically build partnerships with entities that would generate the most lasting impacts and forge relationships with *both* the large tech corporation and the philanthropic trust featured in Chapters 4 and 5 respectively.

Sometimes it isn't funding which is donated to a development initiative but technical labor itself. For instance, at least two web portals in the sample received *pro bono* donations in the form of services from tech companies who designed and built their web platforms. In multiple cases, this work amounted to over one million dollars in labor. In one initiative, a searchable mapping tool that codes an area's water risks based on government data, several tech companies supplied not funding but the labor to design and build the online platform to anticipate water supply and contamination issues for their corporations as well as representatives of other industries. Though publicly available, the tool was designed by a

consortium of corporations operating in India to assess, avoid, and strategize around various

risks water scarcity and pollution might pose to their business operations.

Political patronage

Numerous programs within this sample of development (techno)media were created

or expanded because of the influence particular tech entrepreneurs or institutions had within

formal political processes. In the instances of the five national knowledge portals, for

example, the projects' originated when several tech entrepreneurs made recommendations for

web portals as a point of national policy as they occupied a high-level governmental

commission. In these cases, it is not resources per se which are directed toward the initiatives

but a kind of discursive or political space, imperative, or invitation to exist within institutions

with political authority. I analyze one such case in detail in Chapter 3.

Mythic capital and the IT narrative

Development (techno)media is a scene where the mythic, heroic narratives of high

technology and high technologists circulate. An ex-NASA scientist, an open software

"pioneer," a promising astrophysicist who graduated from MIT, an IITian, a "social

entrepreneur at the forefront of ICT" – these are some of the ways some founders of

development (techno)media are presented in program narratives, particularly among the

programs in the sample which most enthusiastically embrace digital technologies in their

dissemination work. While I have already discussed in Chapter 1 how such mythic refrains

are deployed by several very wealthy tech entrepreneur-celebrities as they transform various

forms of capital to access processes of governance, here one sees similar narrative attributes

for individuals of slightly lesser degrees of fame, wealth, and political influence. Yet, these narrative formulae seem to serve similar purposes. They depict development (techno)media organizations as promising start-up businesses that are just in need of an investor or capital so they can revolutionize whatever problem they have set out to solve – in these cases, transparency in development reporting, local journalism, agricultural extension services, or informational poverty. While only a handful of organizations that can boast a mythic founder (i.e. young, tech genius) narrative, it is a narrative that almost always seems to work. In other words, these organizations are among the most well-funded in the sample – indeed, many lay claim to what seems a deluge of funding, often from other tech sources, in comparison to other development (techno)media. Similarly, its founders are well-publicized as well, appearing on lists of start-ups or entrepreneurs to watch. Given that these programs all also claim to offer technical services for development (either for other development non-profits or in the form of development projects), such messages are both on-brand and lucrative.

TechFarmer and the Digital Empowerment Foundation are two organizations that rely upon the heroic portrayals of their founders (young and promising engineers in high technology in each case), and both also enthusiastically assert a broad philosophy that technology can or will improve lives. While TechFarmer consolidates its work around the specific model of filming and broadcasting videos about agriculture or hygiene to small groups of rural farmers, the Digital Empowerment Foundation is a wide-ranging organization that hosts award ceremonies for ICT4D organizations in India and sets up computing centers, Internet, websites, and digital "solutions" for populations of need in South Asia and Africa, such as women, rural poor, members of backward and scheduled castes and tribes, and slum dwellers as they confront various development problems. The Digital Empowerment

Foundation, like TechFarmer, is recognized by many as an organization that is both exemplary in its design of technoscientific, often Internet-centered development programs and a reliable vector for reaching potential developmental subjects. Through its various networks of contacts, the Digital Empowerment Foundation was courted by Facebook for ongoing consultations and to guide CEO Mark Zuckerberg's 2014 visit to sites in rural India as he was planning the global expansion of Facebook in the form of Internet.org (Bhatia 2016).

In several instances, tech-based non-profit organizations stand to reap niche economic opportunities unavailable to non-profits without expertise in high technologies. ICT4D is an increasingly popular idiom of development, especially with the proliferation of metrics and reporting software. Several organizations in the sample were started, in part, because their founders were fully aware of a burgeoning new market for tech skills in the development sector. For one organization, new public policies surrounding the regulation of radio and non-profits suggested that there might be an explosion of NGO-organized community radio initiatives in the coming years. Its founder, who had just finished his doctorate in computer science, knew that few existing technology providers would be available, both in areas of expertise as well as at the lower rates required by NGOs, to capture that market as it opened up. However, when lapses or delays in funding for interested organizations prevented the explosive market the organization's founder had anticipated, he decided to develop his own set of programs around the technology. Today, he oversees community-based mobile phone radio stations in central and eastern India while also, for continuity of support, occasionally contracting out the organization's tech services as opportunities arise and working on the project within research groups at IIT-Delhi. For those non-profit organizations that centralize

technology or its services and have in-house expertise in this area, many are able to offer a few programs or technical services for a fee. Such technical, fee-based services often bring money into the organization to bolster gaps in funding elsewhere, a source of income unavailable to many other non-profits working in development.

Many more programs, however, are founded and overseen by people who have personally worked in tech in some capacity – more than one third of the programs in the sample. Aside from the mythic hero narrative of young tech geniuses revolutionizing development, I found another iconic tech figure at work within the founding stories of several other organizations: that of the software engineer who leaves tech to pursue a more fulfilling life focused on improving Indian society. To demonstrate this variant of the IT narrative, I turn to the story of *Bangalore Examiner*, a crowd-funded community journalism initiative:

Citizen-Journalism for Development: Leaving tech to work on one's city

The alternative media foundation and publication, *Bangalore Examiner*, was started by two people, Kiki and Vyan, who had both worked within tech and were inspired to leave the IT industry to improve their city, Bangalore, whose development they saw as unsustainable, misdirected, and non-transparent. As both pursued their independent journeys to become more civically informed and engaged, Kiki and Vyan came to identify citizen-journalism and community media as a means by which they could research, critique, and spread awareness about ongoing urban developments as well as put public pressure on municipal authorities to make better decisions in city planning and contracting. Though they went through these journeys separately – with Vyan beginning his own media initiative with

another technologist-turned-social-entrepreneur in 1999 and Kiki entering the space several years later – they soon met through mutual social contacts and decided to begin an independent community media publication, which would be compiled by citizens and for citizens.

The *Bangalore Examiner* is now an established online news magazine that publishes investigative, news, and opinion pieces on issues of popular relevance in Bangalore, largely urban developments and management. The organization adopts a journalistic model for its work – it upholds an editorial policy, is committed to journalistic principles (such as accuracy, independence, and impartiality), and tries to publish with the regularity of a professional community media enterprise – but its reporters are largely citizen volunteers. Citizens, Kiki and others at the *Bangalore Examiner* believe, often have highly specific or specialized knowledge of the city or their neighborhood that others, including professional journalists, rarely have. Such knowledge, as well as a citizen's stake in their city or neighborhood, are rare resources that can enhance journalistic investigations about urban developments. Further, citizen-journalism is a way that citizens can become more civically active, as their journalism not only contributes to their search for answers about ongoing changes in the city but it also gives them a venue to publicize their investigations and views, which in turn could incite positive change. *Bangalore Examiner* also publishes guides to the city that are designed to help people better understand and navigate bureaucratic processes surrounding many aspects of city life. Most of its work is in English despite the diverse multilingualism of Bangalore, whose inhabitants may likely speak one of at least seven languages, and this is because the organization has limited resources for translation and understands its primary audience to be middle-class residents, most of whom speak English.

Over the years, the group has trained citizens in investigative reporting and journalistic writing, and accumulated several full-time writers on their staff. In keeping with their community media model, *Bangalore Examiner* seeks to remain independent in its funding and is funded through donations from readers and other sources, which it forwards into a separate non-profit trust.

The problem at the root of *Bangalore Examiner*'s founding is the rapid and unsustainable urban development of Bangalore, which Kiki described as an important motivating force for her personally to start the media initiative:

> When I came back to India after a year in 2004, there were a lot of issues locally. If the city looks broken now, that was the starting point…It was just getting too fast for its own good. And things were so messy, and I started asking questions, like all of these flyovers, all of these pipelines which are not done, Where are these projects? What are the budgets? Who decides? There was very little coverage [by] local media in those days. You would find a few stories on page 3, but not really…Most people didn't even know that there was a local government and there's a council and there are these wards and elections. If you were a part of your residents' association, a few people would ask the government, ask the officials fix this, do this and do that. It was very limited. That kind of awareness in consciousness wasn't there. That was the second part, trying to understand as a resident here why things are the way they are. So, between these two, I decided that I would join the space.

The high-tech industry has influenced the history of the publication in numerous ways. In a large sense, the rapid rise of Bangalore as a global tech hub, or the rapid movements of IT-related capital and its consequences on Bangalore's urban form, produced much of the equally rapid and unsustainable urban developments (see Chapter 4) that prompted Kiki and Vyan to start the *Bangalore Examiner* in the first place. Also, Kiki's labor experiences in tech drew her abroad for several months or years at a time. The relocation and mobility normative to Kiki's tech position intensified her view of Bangalore; after time abroad, she re-saw the city through a progression of urban developments as if they had happened at once,

and that view was possibly augmented by memories or expectations of urban life she had

formed abroad. One important influence working abroad in tech was her exposure to

community-based alternative media:

> I'd done almost a decade in technology, IT, and having seen good quality
> local media in other parts of the world, I always questioned, why we don't
> have such a kind of quality? Like, in the U.S., I used to hear NPR everyday. I
> was in Boulder for a few months, for 3 months, and I saw the local Boulder
> weekly, which– I was there during 9/11, and it was actually, it was a local
> newspaper that actually talked about the– I think the headline was something
> like, "Where we went wrong" or something like that. It was a very self-critical
> piece when this huge thing had happened, and they actually looked at what
> America was doing, which brought it on them, which, of course, was pretty
> surprising, and it was a good article. It kind of showed that local media could
> really go in-depth, ask hard questions, and be independent…In all that, I
> basically got the idea that we need a local independent media too.

As Kiki describes it, exposures that she'd had abroad while working in tech and the shock of

returning to her rapidly developing city after a decade away gave her new models and

motivations for commencing a new professional path outside of the high-tech industry. While

Kiki does not emphasize issues with fulfillment in her decision to leave the tech sector to

start a community media venture, seeking a more fulfilling professional life is common

among tech or other corporations in India, so common that I met a number of people during

my research who were taking a sabbatical from their careers in tech or finance to work in a

non-profit or more charitable post with some permanently switching to such jobs (see

Chapter 5).

The *Bangalore Examiner*'s work differs from many initiatives in this sample in the

sense that it is not guided by a larger ideology that digital technologies can bring great social

benefits to development goals or projects. It is, rather, more closely aligned with the

informational and ethical models established by journalism. Yet, while Kiki describes her

past professional life in tech as one of stagnation and irrelevance "formerly yet another

manager at an IT firm," her co-founder, Vyan, and their mutual partner, Imran, present themselves as "social technologists" while deploying more heroic narratives that moralize high technology and their efficiency as a medium to solving larger social problems. So while the *Bangalore Examiner* may seem to be immune from the tendency to mythologize high technology, such discourses are certainly present within the organization and the group which founded it. This, too, is despite the deeper role IT has played in Bangalore's calamitous urban development.

Conclusion

This chapter has described various examples of development (techno)media and advanced the argument that this particular field reflects a shifting politics of development wherein state authority is (or is perceived to be) diminishing and the targets of development are shifting. To summarize, many of the oldest organizations in the sample describe the Indian government as the central, proper political authority and manager of development and target external, material objects as the locus of their interventions. More recently founded organizations operate with a decentered understanding of the state and work on reforming the terms of subjecthood in ways that devolve responsibilities to individuals to, on the basis of their information access, be more self-educated and to be more directly involved in social

change. This argument emerged after analyzing the sample of 30 development organizations

for numerous months and from many directions, taking into account media formats and

dissemination models, organizational structures and funding, claimed societal impacts,

discourses and messaging, and the larger goals or ideas of success held by a program. It

seemed that none of these queries or orderings of programs produced much beyond a pattern

that was only applicable to a subset of the sample, and, indeed, given the diversity of

institutional arrangements, philosophies of information and social change, and program

goals, this is to be expected. Development programs and actors are ceaselessly

heterogeneous, and to present them as otherwise is a fallacy, as Kumar has pointed out

(2019). But one ordering of the study initiatives did reveal a significant pattern, and it was

applicable across the whole sample: the date of founding. With the passing of each year of

founding, it becomes more and more likely for an organization to situate their work and goals

as occurring within a political network where the state plays – or is perceived to play – an

ever-diminishing role.

But why should the year of founding matter when both organizations and their

projects can change over time? Organizations have many opportunities for reinvention and

transformation: They can redefine their missions and goals, they start new projects and end

older ones, and they may change staff and leadership too. These questions raise legitimate

concerns which I cannot fully address. However, there are several reasons why older

programs in the sample studied here might retain some philosophical and political continuity

over time. One reason is that most of the older programs are run by organizations that have

been quite successful and have received international recognition for their work. Perhaps

because of their reputation and past record of success, these few organizations have chosen to

maintain much of their strategies, audiences, or framings of programs while searching for

funding. Another possibility is that because these organizations are so well-established, they

have acquired the power and connections necessary to influence the state. (I doubt this

particular explanation, because there are newer organizations who can exert power and

influence within national governments.) The oldest organizations in the sample also all have

highly centralized management. They are managed by their original founders, and much of

the organization's activities are tightly controlled by those individuals[30]. Finally, perhaps it is

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[30] No matter how much the messaging of a given platform is structured by the its underlying ideologies or the problem it is intended to solve, it is even more drastically impacted along the way by those staffed with carrying out the initiatives. For instance, organizations where original founders continue to play a deep role in

not so easy to shift a given organization's philosophies and practices even after changing

staff. In a report on several Indian newspapers, some English and some Hindi, as they

manage their transition to circulating content digitally, several researchers have found that

even after hiring new staff who specialize in digital media, older media organizations

struggle to adjust given trenchant professional hierarchies, work culture, and philosophies

that hold traditions of print journalism above digital media practices (Aneez et al. 2016).

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activities seem to also commit to the messaging, framing, media, and dissemination models which are most closely aligned with the founding ideas for the information intervention. For instance, a fortnightly publication (and blog) that publishes critical analyses of dams, other large water projects, and water policies in South Asia has stayed tightly consistent to its original aims due not only to the commitments of its writers but even more so to the ongoing work of its founder, who scrutinizes and edits every piece published, writes many articles himself, and is responsible for responding to most public appearances for the publication. In another, the organizer of an international film festival on water personally screens all film submissions and selects only those which meet his criteria for entry, largely artistic films and activist-oriented documentaries. In both of these circumstances, though the publication and film festival now look different than they were originally envisioned (due to, respectively, finding additional issues relevant to the mission of the publication and drastic variation in funding over festival years), in each of these cases, the presence of the founder ensures the information and knowledge disseminated tightly conform to the vision of the enterprise.

Conversely, in knowledge sharing initiatives with large staff sizes, high turnover rates, and with "anchor organizations" (organizations which have been delegated the task of carrying out another's vision for information dissemination), the messaging can often meander quite extensively from the project's original goals. For instance, a non-profit organization which focuses on action-research projects on water and sanitation across South Asia aspired, earlier in its history, to become the first free online university on water issues. In breadth and depth, the educational resources would educate anyone interested extensively in water issues. While the organization did establish a fellowship program to supplement civil and hydraulic engineering education with perspectives from civil society and social science – and created many digital resources to support those interested in similar education materials – a trajectory pulsed by the securing of grants and the subsequent commitment to location-specific development projects planned in the grant proposals made it difficult for the organization to fully pursue their goal to become an open-access online university. Further, an ever-changing staff who had merely inherited goals established and planned early in the organization's history did not renew the organization's commitment to the same projects or ideas about what their knowledge contributions should look like. Rather than continuing to devote resources for creating an online university and making engineering education more holistic, they eventually came to focus exclusively on knowledge dissemination related to their action-research development projects.

These various manifestations of information in or for development depend additionally on the often highly standardized conditions of production (including grantwriting or fundraising strategies) and the impact upon or approval of the masses as means of measuring success.

These concerns could be explored with greater detail in future research that goes beyond a survey.

At the very least this comparative survey generates two main sets of questions, one set about the shifts within development politics this research has detected and another on the role of representatives of the high-tech sector in shaping the field of development (techno)media. I address the more specialized set of questions, about the pervasiveness of the high technology sector in the field of development (techno)media: Why the near-omnipresence of IT here? What is the IT sector doing within or to this assemblage within development?

To answer these questions, it is necessary to break apart an otherwise opaque category: the high technology or I(C)T sector itself, which consists, minimally, of tech businesses (large and small), startups, digital technologies themselves, tech workers, aspirational idioms, sites of vocational education and training, entrepreneurs, capital generated from the tech sector and its sometimes-afterlife as philanthropic or business investment, organizational forms such as philanthropic trusts and CSR, geographies (symbolic or otherwise) and the way the accumulation of tech capital transforms them, and

IT narratives and their underlying ideologies. These, too, are not uniform or singular entities

in themselves. Donors differ in their modes of giving and who they fund, for instance. But if

one keeps the view to the middle ground – in between individual or organizational

idiosyncrasies and an understanding of the tech sector as a single, monolithic thing – what is

revealed? Which part(s) of the tech sector are the ones which permeate the landscape of

development (techno)media?

Foremost, one particular figure within the high technology sector, that of the patron,

is particularly pervasive within the field of development (techno)media. More than half of the

programs in this analysis were funded by corporate or private capital from the tech sector,

and an additional two, though not given monetary support, were made possible by substantial

software or service donations by a tech corporation. References to the tech sector during

interviews, too, were particularly laden with the names of funders, such as, for example, the

Bill and Melinda Gates Foundation (which came up surprisingly infrequently given that it is

the world's largest private funder for development organizations working on water), the

NASSCOM Foundation, and the names of many tech companies. In the case of five national

knowledge portals, tech sector entrepreneurs offered not donations but political patronage by

calling for their existence in the name of national development (see Chapter 3 for further

discussion).

As patrons, "development thinkers" (see Pitroda 2015), and program funders, high-

tech sector representatives orient the landscape of development (techno)media. They, or a

staff or committee which they have designated, select the programs or organizations that

receive awards and grants. Out of the programs in this sample, all that heavily utilize digital

technologies in their program design are funded by at least one source from the high-tech

sector. Taking a closer look at the programs which are online but not funded by the high-tech

sector is telling: Of these six programs, one is a blog with no annual budget (and does not

seek external funding), two are funded by the Government of India, and the three others are

national knowledge web portals, whose terms of existence – management by institutions with

expertise in the topic of the portal – were initially established by a technocratic national

commission. But it is not only highly technical or Internet-based development programs

which are funded or otherwise supported by the tech sector – almost all of the development

(techno)media programs which work offline are funded by tech sector sources as well.

Indeed, if the IT industry weren't as small as it is, employing merely 2-3% of those who

work in India (including through indirect employment), the pervasiveness of the high-tech

sector in this sample might lead one to think that IT orients the *general cultural* landscape of

development in India. But the high-tech industry is small, and, further, patrons from the high-

tech sector are not limitless in their influence here, nor are they alone. They fund and operate

within a philanthropic field that is filled with other actors, especially private international

development donors and multi-lateral institutions. Similarly, most programs of development

(techno)media assemble funding from a mixture of such sources.

Given the high concentration of tech philanthropists in India, as compared to other

nations where charitable giving is dominated by private wealth derived from other industries,

perhaps it follows naturally that many organizations in this research had received financial

grants from tech sources[31]. Similarly, information, education, knowledge, or technology are

common themes that cut across the philanthropic activity of this group. Among ten top tech

sector philanthropists in India, more than half, six of them, focus the majority of their

philanthropy on educational or communication initiatives. Several have founded (and

[31] The lists which detail the most giving philanthropists of India are not the same as those which list the wealthiest individuals. Wealthy tech entrepreneurs are particularly involved in philanthropy (and the enhanced public image which is often gained from it).

continue to fully support) private universities or other training centers. All but one gives

significantly to or maintains an ongoing program to education, though even that individual

philanthropist focuses on an issue not far removed from education: keeping school children

healthy and attentive by offering them free lunch. While these are simply examples of

programs or focus areas featured in annual reports of foundations associated with various

tech sector philanthropists, they suggest that knowledge, information, and technology have

either become central to the episteme of development or that, conversely, philanthropy

originating from the high-tech sector is fueling that shift. A larger study or, more

importantly, research examining the agendas, motivations, patterns, and protocol of private

tech funding would help determine which is occurring.

There is another resource made available by the high-technology sector to programs

or organizations of development (techno)media, and that is its mythic capital. Those

organizations that can present one of their founders in mythic terms *all* have comparatively

comfortable funding situations. Either they have been awarded an array of grants from many

funding agencies or have a permanent and generous funder. One demonstration of this is the

staff sizes of such organizations. Whereas the median staff size for organizations within the

sample is five people, the average staff size for an organization with a founder who can claim

mythic capital because of a tech-sector past is 116 people. Collectively, the six organizations

which deploy such narratives employ nearly 700 people, over two-thirds of the combined

paid staff of the 30 organizations in the sample. Aside from the pet projects of tech

corporations or foundations within the sample, only 2-3 programs within the sample (and

these are among the few programs which have been established for decades) can claim access

to a similar degree of resources.

Here, not among tech entrepreneur-celebrities who have founded large and famed

companies or products, but among so-called "social technologists" or "social entrepreneurs,"

such as Tejul Shah, the founder of TechFarmer, one sees an expanded sense of Dasgupta's

notion of the "IT narrative" (2015). For Dasgupta, the IT narrative casts tech sector actors

and institutions as being well-suited for political leadership of India given how well they

have competed in global markets (2015), but in these programs of development

(techno)media, it is not governance of the nation which is at stake, but, rather, governance

over the kind of piecemeal, population- and project-realms which comprise much of

privatized development. Those who can present themselves as ex-astronauts, IT

revolutionaries, or who can claim a kind of magical brilliance inherent in their young

technological genius-founder(s) can attract comparatively enormous flows of private

investment. This finding, that the IT narrative is not confined to the highest positions or

opportunities of political power nor to corporate celebrities and their families, but also

includes individuals with a small collection of impressive past high-tech affiliations acting

entrepreneurially within privatized development is important, for it greatly expands the

political fields under transformation and the flows of capital commanded by actors from the

high-technology sector.

        The second set of questions which emerge from the survey research presented in this

chapter are remarkably larger: Is a transformation to the fundamental authorities which

oversee, manage, or orient development underway? Is the political grammar of development

changing? And if so, how and why is this occurring? What do recently emergent information

communication technologies contribute to these shifts? To ongoing economic liberalization?

        It is important to remember that the many programs of development (techno)media

which I discuss here are materializations of social and political relationships. Based on what

many founders and directors of such programs have depicted, these social and political

relationships, the very relations which constitute development, are shifting, from the

institutions who order them, the political authorities observed at the helm, and the targets of

intervention. As new instances of development (techno)media have been created, they have

forged themselves differently, and, perhaps, in doing so, they contribute to forging an altered

political landscape. A key piece of this story is patronage received from newly enriched tech

companies, entrepreneurs, and their families, but these are not the only patrons of this new

politics. Alongside them are many foreign and multi-lateral development funders whose

development alliances and engagements, as Mosse has described (2005), have increasingly

evolved from diplomacy and aid directed toward state agencies to direct liaisons with an

array of private organizations, such as non-profits and corporations.

These shifts are importantly occurring within the broader historical context of

economic liberalization, which certainly contributes to shaping these relationships and

political trajectories. This is not only because economic liberalization has produced widely

impactful policies but also, and likely more importantly, many cultural effects which

reverberate throughout society. It is unclear whether liberalization policies have significantly

altered class membership (i.e. the relative size of the lower, middle, and upper classes) (Gupta and Sivaramakrishnan 2011), but liberalization has certainly prompted sizeable changes to popular ideas and expressions of class (Fernandes 2006; Dickey 2016). While middle-class comportment, drawing upon Gandhian ideals of humility, used to renounce lavish public displays of wealth or materialism, middle-class identity is now importantly signaled by and expressed through consumptions and objects, such as motor bikes and mobile phones. Similarly, imaginaries of the state have transformed from positioning state as a singular, proper, and good authority (see Roy 2007; Fernandes 2006) to having misguided Indian development for the first several decades of independence and as a second-rate option for employment (Fernandes 2006) and development planning. At the same time, however, it is important to acknowledge that the state, as some of the development (techno)media discussed here show, is also looked to for various resources – legitimacy, funding, seats within policymaking bodies – and thus is itself is a patron of an emergent politics which treats it as a diminished authority. The development (techno)media explored here reflect these shifting cultural forms, as seen in the expressions of nationalism articulated by the various programs. The two oldest organizations in the sample, and the only which began

before economic liberalization, are either run by the state itself (in service of the state) or

pursue a resolutely Gandhian idiom of activism and social justice whereas the younger

programs propose more complex, often government-critical expressions of nationalism.

But these larger shifts seem to be related to technological history as to ongoing

liberalization and the patronage of recently empowered economic actors within it. Within the

sample, as well as the original list of 95 development (techno)media programs, one can see a

burst of new initiatives beginning in the mid-2000s. Indeed, over half of the programs in the

sample were founded between 2005 and 2009. Most of these instances of development

(techno)media are those which utilize the Internet for their information dissemination and,

furthermore, whose imaginaries are entangled with and made possible by that burgeoning

technology.

New information communication technologies present unique, fundamentally new

possibilities to communication that may contribute to the shifting development politics traced

here. They are, unlike many other media technologies or practices of information sharing

which preceded them, two-way and interactive, and made available in an archive accessible

at any time (Elmer, Langlois, and McKelvey 2012). Robin Jeffrey and Assa Doron, in their

analysis of the political and social impacts of the mobile phone, now pervasive, in India,

characterize mobile telephony as fundamentally disruptive even though it has not quite yet

reversed common social hierarchies. It has provided, they write,

> Access to global flows of knowledge; altered local cultural practices; mobilized political and social movements; and challenged gender dynamics. … It makes its owners into potential publishers and documentary makers. It surmounts physical barriers … A person's voice can bypass the oppressive landlord or unsympathetic policeman, and an individual can arrange a meeting, tell a story, warn a friend, lodge a complaint or call for help without having either to be present or literate. Violations of the law can be photographed and disseminated without the knowledge of perpetrators that their actions have been captured (2013, 210, 223-4).

New ICTs such as the mobile phone and Internet, a notably much more exclusive medium,

make possible acts of communication, both intimate and mass-disseminated, for – and

between – many more people of many more statuses and backgrounds than previous

technologies. They thus offer both the imagination of direct communication and interaction

with large publics and also tools for feasibly pursuing it. It is thus unsurprising that

development occurring within the historical context of economic liberalization, with

patronage of liberalization's economic and moral heroes, and through digital technologies

which enable decentralized mass-communication reflect a new, state-decentered political

grammar.

Fetish and expertise: The promise of the national knowledge portal and techno-informational citizenship, from policy to program

The office of WaterWeb is located in a posh neighborhood in eastern Bangalore

inside a large, repurposed joint family home. Many windows in the non-profit's office

provide inevitable views of what happens on the street below, as when, on a Tuesday

morning in the middle of July 2009, a crew of laborers and a truck pulled up across from the

office and started to install a borewell, a well formed by plastic tubing designed to extract

water from several hundreds of feet below ground. Seeing laborers dig a borewell from the

second floor of the office offered an opportunity, some looking from above thought. As

Rajeet, an early program director of WaterWeb later reflected to me, "Every day we discuss

borewells, but we actually know very little
about how they work and how they are
drilled. So, a few of us thought, let's film it
and see if we might learn something." The
film that resulted is a compilation of shots
of the borewell installation over a period of
two days. The view of the film is stationary
throughout, filmed at ground level and
zoomed in to feature the activity of the

laborers drilling the borewell. Over the

Image 1. Scenes from the 2009 WaterWeb film.

course of the 10-minute video, one sees 5-7

men, in front of a storefront, who are mostly absorbed in feeding the casing tubes for the

borewell into a drilling rig, but sometimes eating lunch and taking tea, sometimes examining

the inserted tubes, sometimes guiding the tubes as the drill rig launches them forcefully into the ground, and finally, we see the men leave the site once the well is completed. Every now and then, the heads of pedestrians or an occasional vehicle, bicyclist or car, which move across the screen; that these come in between the camera and the borewell scene suggests that much of the video was filmed from across the street just outside of WaterWeb's office.

The film is shot more as a moving diorama than in a style typical of documentary films, which rely heavily on personal testimony and interviews. While the film features no interviews or vocal narration, its maker, someone in WaterWeb's small staff, edited text into the video. This textual narration often describes events and features that can be clearly seen on screen – "truck with supplies," "casing pipes are now being inserted into the hole," "it's very repetitive – the more pipes are inserted the deeper the well." The narration also is a space where questions are posed. There are questions that seem to notate a field of unknown but desirable knowledge, as in a question posed at the beginning of the video, which asks "Is this an appropriate location? Are there rules that govern where a borewell can and cannot be struck?" Other questions are more critical, as when a man who appears younger and smaller than the rest of the workers comes onto the scene, the text points out "underaged labourer? Illegal?" and, finally, when the team seals the borewell shut but leaves piles of rock and a large pool of water and mud, the video presents another inquiry-critique: "And this massive mess…who's responsible for cleaning it up? Who will hold them accountable?" Though not representative of WaterWeb's other YouTube films and created when the portal was still quite new to the field of water and development (4 years), the film is still impactful: it is among the organization's most popular videos. With more than 70,000 views, it remains one

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of the most highly circulated visualizations created by the organization even after ten years of circulation.

At its outset, the video promises a tutorial in or at least an explanation of borewell drilling, and, in some respects, it delivers on this promise: it reveals the basic materials required, steps administered, and human labor necessary for drilling a borewell, and it positions its gaze so that the audience may witness this process from beginning to end. In some ways, the film contributes an extended sight into the human and mechanized labor required to install a borewell, of which there are many millions nationwide. However, even with the intermittent textual critiques edited into the film, which appear to derive from an overwhelmingly middle class concern with the cleanliness and orderliness of the city, one wonders what is learned, as the film does not reveal any information about the dwindling supply of groundwater in India or even Bangalore, its central place in water management, ideas for conservation, or even meaningful information about the particular borewell filmed, such as its role in the immediate area's water supply or its relationship to privatized networks of water extraction. Lacking, too, are answers to common questions that arise for people whose water comes from borewells: What to do when the pressure goes out? How far down is appropriate to submerge the motor for pumping water? How does one select which kind of well to install and where should one place it? The short film concludes with a shot that slowly zooms in on the lid that tightly seals the newly installed borewell and the still mysterious, unseen element of groundwater. In many ways, this ending is appropriate, as the film, like the concluding shot, leaves one with a sense that despite the technical completion of the film, much more is to be seen and known.

Despite its popularity, the video is not typical of the films on the portal, which are often submitted by interns, partner organizations or filmed and edited by members of its content production team (formed after 2011) who specialize in video production. Yet, this video, as an act of creation and publishing pursued as a means of self-education for the organization's staff, reveals a fundamental dynamic to many "knowledge for development" programs: the need to establish epistemic authority through expert knowledge of the portal's topic. With its anxieties over urban orderliness and construction regulations, the borewell video described above indeed reflects middle-class or even elite concerns about water and city management, but the film also reveals a small moment in a larger, normally intimate learning process, documenting not only the process of drilling a borewell, but also the process of amateur non-profit staff *practicing* a set of rhetorical frames essential to expert-level discourse of non-profit water management professionals – in this case, identifying water problems and applying the framework of collective action in their analysis in hopes of discovering potential solutions. There have been numerous dynamics internal to WaterWeb, which have deeply structured the kinds of knowledge WaterWeb has pursued and published. At particular moments, as the filmmaking exercise above suggests, creating content for the portal could offer immersive and experimental self-learning experiences for those who sought new knowledge of a particular topic. At other moments, the desire for epistemic authority, the need to show that one is knowledgeable enough to moderate an online social world based on knowledge about water, has driven decisions about which material to publish and how. Elsewhere, the pursuit of ideals for technological and informational modes of social citizenship has guided the philosophies and content models for WaterWeb. In this chapter, I investigate how WaterWeb's pursuit of both techno-informational citizenship and various

forms of expertise directed the course of its digital informational domain and how those pursuits, in turn, also diminished the portal as a space for public, non-specialist discussion and inquiry – even despite the attempts of the portal's staff to create an accessible, interesting, and relevant portal for a broad public audience.

The borewell video is, of course, one small piece of a much larger media world. Taken together, by June 2017, WaterWeb, which is a privately managed national digitized repository of information on water, had published nearly 800 videos and well over 20,000 other pieces of mostly written content (many original and some reposted from elsewhere). That content takes various forms: articles, reports and chapters, videos, datasheets, data search tools, visualizations, photo essays, news summaries, and question-answer chains. Much more than an extensive repository of discourse on issues of water and national development, WaterWeb is a site where various actors within the tech sector intervene in society to promote information and knowledge sharing as a force of national development and means to a better future. WaterWeb is, itself, a direct product of policy recommendations made by tech entrepreneurs to the Government of India. Originally proposed by the National Knowledge Commission [NKC], a body commissioned by the Government of India and tasked with ensuring India's leadership in the 21st century "global knowledge economy," WaterWeb's genesis is located within much larger discourses about techno-informational citizenship and a knowledge society as they were mobilized by the technocrats who comprised the NKC to create systemic institutional changes. WaterWeb not only exemplifies the intersection of tech entrepreneurs as national visionaries with state planning, but it further demonstrates an example of how private non-profit enterprises sponsored by those associated with the tech sector pursue a national development goal, as the creation and maintenance of

the portal was subsequently sponsored by a private philanthropic trust funded and managed by a prominent tech sector family[32,33].

The web portal, further, is not only an important example of tech sector imagining, philanthropic administration, and investment within development, it is also, more generally, a distinctly utopic literary form constructed according to technoscientific philosophies of citizenship and governance. Techno-informational citizenship, a term I use to refer to a vision for political subjectivity and national belonging that centralizes ICTs and information in national development and everyday life as both a human right and a requirement of governance, has been at the center of many national development programs and policies in India since IT entrepreneurs have been courted as government advisors in the late 1970s and 80s, with lineages of such ideologies reaching deeply into the colonial era. While policies designed to enact techno-informational citizenship have encompassed a large array of suggestions, from digitizing water gauges to digitizing the national currency, here I focus on what I have found to be one of the most citizen-centered areas of techno-informational policy discourse: web portals, especially WaterWeb. It has been the longest-lasting and most consistently operational of the NKC-recommended national web portals and one created by

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[32] Since its beginning in 2005, WaterWeb has been housed within a philanthropic trust which focuses on giving grants to organizations working on water and which is funded and overseen by the family of a prominent tech entrepreneur. WaterWeb is a permanent program that operates both within its host organization (its sole funding source) and somewhat separate from it (many of its staff work exclusively on the portal and often independently from the host organization's other programs). Over its history, the portal has been managed and maintained by as few as two people and, more recently, as many as 25 with a few people working in its administrative headquarters in Bangalore and many more working in satellite offices (the Hindi Water Portal, in Delhi, and the Kannada Water Portal, in Bangalore) or from their homes throughout the country as they investigate and write water-focused stories in their respective regions.

[33] Because WaterWeb arose from a well-known national policymaking exercise, a detail important to the analysis of this chapter, and because all names mentioned in this chapter would be easily discerned through looking up the National Knowledge Commission, the names of all organizations, national policies, and prominent people are not anonymized here; however, individuals, whenever possible, have been given pseudonyms to protect their identity.

the combination of tech sector ideology and investment. Designed to be completely open, highly public fora for discussion and resource-sharing, web portals such as WaterWeb were established to fulfill some of the most public and citizen-friendly aspects of techno-informational citizenship, as it had been imagined within national policymaking exercises such as the National Knowledge Commission. However, the portal's deferral to what its staff considered expert knowledge ultimately depoliticized citizen knowledge and queries into hobbyism and largely reduced their voice in knowledge circulation. This pattern of obscuring and marginalizing the citizen in ideas of a burgeoning knowledge society or commons is hardly specific to WaterWeb; it occurs among other web portals as well and the larger policy frameworks from which they originated.

In this chapter, I trace the assertions of techno-informational citizenship, especially the centrality of expertise within that discourse, made within the first 10 years of WaterWeb's work and the policy from which WaterWeb came, the National Knowledge Commission (NKC). Studying an online media world and the national policy suggestions from which it arose shows not only how organizations and professionals tasked with the act of carrying out policy ultimately change its commitments but also the specific ways in which the larger project of techno-informational citizenship was imagined and pursued by multiple cohorts of technocratic elites. Despite its claims of promoting a general national prosperity, NKC policy emphasized and, later realized with programs such as WaterWeb, the idea of an "Expert Raj," a nation governed by experts (Jasanoff 2012) and largely sidelined citizens as valued stakeholders or participants even as several cohorts of staff sought to expand and diversify the reach of WaterWeb. In following WaterWeb from its genesis through its first ten years, I show how both the initial policy vision for the national portal and its execution

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into a digital domain crystallized into an almost exclusively managerial domain. Knowledge on the portal, for instance, is largely created by and for experts, who came to be primarily imagined as representatives of development NGOs, and the role of citizens is relegated to a few moral tropes who have little voice. Even so, in the few traces of reader-viewers on the site (in Q&A and comments sections and as reported in web analytics and an end-user survey) and in the daily work lives of WaterWeb staff, non-experts also adopt WaterWeb for their own purposes and agendas, which often vary drastically from the ways techno-informational citizenship has been envisioned and enacted by the portal's conceptual and administrative creators.

This chapter examines three distinct moments of WaterWeb's existence: (1) its ideological origins in the National Knowledge Commission and its recommendations, (2) samples of its media over 10 years, and (3) ethnography of portal staff during 2011 and 2014-15. Web portals such as WaterWeb are sprawling in their structure: they are comprised of tens or hundreds of thousands of pieces of content which can vary drastically in genre and media form, and the lived experience those who interact with or use a web portal similarly varies depending on one's vantage point. A government representative of Japan, for instance, will likely interact with the site differently and seek different knowledge than a reporter based in Delhi, a community organizer in Bundelkhand, a researcher in Santa Barbara, or a householder in Bellandur. These end-user experiences will be wholly different from the experiences of those who conduct the daily work of running the portal and publishing its content. This chapter attempts to capture many of these perspectives by accounting for the ideological and policy origins, media, end-user accounts, and everyday labors of WaterWeb.

I draw upon anthropological discussions of expertise in this chapter in two primary ways: first, as a highly social, discursive, and performative practice and, second, as an important site for both interpersonal and structural power dynamics. Expert knowledge, though reified as an intrinsic quality of individuals with special status or training, is a socially enacted affair (Carr 2010; Boyer 2008). It is signified, often using jargon or highly encoded language that is sometimes intentionally difficult to decipher, through discursive acts that perform a special knowledge and relationship to particular objects or ideas by an expert to non-expert audiences. E. Summerson Carr (2010) has drawn attention to a four-stage semiotic process by which people come to either occupy a position of expert or accept the expertise of others: socialization (into the role of expert and the specialized discursive cues it requires), evaluation (of particular knowledge as expert, of the values inherently embedded in the mapping of knowledge and authority that the enactment of expertise entails), and institutionalization and naturalization (of a given knowledge or subject as expert). Web portals such as WaterWeb are both an idealized literary and communicative form for techno-informational philosophies of citizenship and governance *and* extensive, ongoing sites of discursive interaction. They reveal not only the centrality of expert knowledge within techno-informational citizenship but, more importantly, the finer processes by which that expertise is institutionalized, naturalized, and used to control the voices and participation of non-experts.

Expertise denotes sites of power difference and domination, both on interpersonal and structural levels, as expert knowledge always acts upon – and actively contributes to – a bifurcation of people and the epistemic responsibilities they are deemed trustworthy of, maintaining acute differences between experts and laypersons. Expert knowledge thus goes beyond simply a specialized relationship between an expert and their object of expertise. It

importantly is created through establishing and minding non-breachable boundaries between that which is expert and not, though experts and their conclusions can certainly be challenged by those subject to them.

Operating profusely on a structural levels, experts and expert knowledge have played a fundamental role in politics of the 20th and 21st centuries across the world, and they figure deeply into the composition of national and global configurations of power (Mitchell 2002; Jasanoff 2012; Vaughn 2010). Expert knowledge is perhaps the original germ of modern statecraft, as those wielding new knowledge in statistics and experimental, demonstration-based science both originated and enacted *governmental* technologies (technologies which not only characterize larger populations but also administer and control them) at key moments in political history, and it continues to do so. Theorist Sheila Jasanoff argues that contemporary political administrations run according to an "Expert Raj," or "(an imperium of experts) whose modes of acquiring authority, especially in global institutions, are as opaque to ordinary citizens as the self-legitimating claims of rules in distant metropoles were to colonial subjects living in the peripheries of empire" (2012, 11). Experts and the leveraging of expert knowledge is thus important not only because of its place within power but the opaqueness of its rule. How does expert knowledge come into its power? How is it selected for application within projects of state and imperial administration and power? By what public and private rituals is expert knowledge reified as authoritative within the realm of public administration? Jasanoff argues that fields such as STS (Science and Technology Studies) have much more thoroughly examined the subtle dynamics of expert knowledges (and their claims to power) within the creation of laboratory environments, the production of specific scientific knowledge, and certain technologies rather than larger configurations of

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political rule and even epistemes of cultural knowledge and habitus (2012). Digital knowledge portals and WaterWeb more specifically, especially as they have at times originated from recommendations made within the state or otherwise in the private administrative realms of philanthropists, again, reveal the subtle processes by which expertise is granted authority, over whom it is exercised, and according to which values it is calibrated.

I find it important to note here, as I write amidst critical debates about a post-truth world and the false equivalencies often drawn between opinion and research or fact in public political discourse, that while expert knowledge is indeed crucial for solving many complex contemporary environmental and social issues. But while the national portals were originally conceived as spaces for citizen participation and sharing, I show how the portals went from a being broadly national public resource and domain to becoming a resource that was almost exclusively catered to experts. It is the portal's mandate of public use and good, which was, I argue, thoroughly disrupted by its centralization of experts that I critique, not expert knowledge generally.

The National Knowledge Commission: A vision for techno-informational citizenship

Among the many national programs that have resulted from the interaction between tech entrepreneurs and the Indian state, few have been more wide-ranging than the National Knowledge Commission, a small policymaking body comprised of a technocratic elite convened between 2006 and 2014. The NKC ultimately proposed over 300 national policy recommendations across many sectors of industry and employment, education, government, language, and other social institutions. According to the commission's charge, these

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recommendations were meant to bring India into a prosperous "knowledge society" for the 21st century. While many of these policies were never adopted, the commission was hardly benign or without influence. Several NKC recommendations ultimately materialized, either through government legislation or private investment. The commission thus proffered seemingly apolitical pathways to statecraft for those who contributed to it. It was also a means by which those in support of the commission's recommendations, within the central government and outside of it, could cast themselves in the then-golden idiom of modern, tech-oriented national development. In this section of the chapter, I examine the NKC's recommendations as the political context of WaterWeb but also much more: a vision for the future that called upon the machineries of state and enterprise to reset the course of national development according to ideals of techno-informational citizenship. As a visionary document containing the guiding philosophy of a new technocratic elite, the National Knowledge Commission's policy recommendations were not merely courses of action proposed to solve what their reports referred to as the "quiet crisis" of higher education in India, as most public debate took them to be, but rather a broad-sweeping proposal to install neoliberalism and techno-science across major social institutions on the basis of an otherwise erratic, unstable philosophy of knowledge.

As a special commission, the NKC occupied a unique genre of high-level bodies in Indian political administration. It, like other commissions that had come before and would come after, was granted a special and highly powerful status, as its organizational chart (featured in each report) depicted. Though not a ministry in itself, the NKC reported directly to the Prime Minister and was considered to occupy the same rank as the highest-ranking bodies of the Indian Government: Union Ministers (e.g. Minister of Water Resources), states,

and the National Planning Commission (National Knowledge Commission 2007, 1), an organizational structure derived from colonial British governance which made use of commissions as an institutional form (Tyagi 1959).

Commissions are comprised of experts (usually on the same topic as the commission's focus) who are to deliver their reasoned opinions in the form of reports to the central government, sometimes after a process of consultation with civil society. And though commissions and their members are appointed by the government, they are meant to be independent of both party politics and the governing administration of the day (Tyagi 1959). Indeed, in his description of the role of the Public Service Commission, the body which has long been charged with staffing the esteemed Indian civil services, Tyagi goes so far to argue that the prestige and reputation of a commission is more important than its actual competence in the issues or administration at the heart of the commission, which of course are also important. In ranking the reputation (under the heading "Vision and Integrity") of a commission above "Administrative Ability" and "Personnel Management," two skills integral to the tasks of the Public Service Commission, Tyagi suggests that the prestigious and apolitical reputations of experts, through commissions, uphold popular faith in democracy. He says,

> Independence of the Public Service Commissions is not an end in itself. It is merely a means to an end, the end being the securing of the services of a competent, honest and fearless body of public spirited persons which may guard the merit system in public service and may render other expert help in the formulation of personnel policy by the Government. … The reputation of the candidates for honesty and fair-dealing should be above reproach. Members of high intelligence and capacity, but enjoying questionable reputation in public life will cause more harm to the status and reputation of the Commission than incompetent members. Like the Judiciary, Public Service Commission is a pillar upon which the edifice of democracy stands. If people lose confidence in the impartiality and independence of these two institutions, then democracy would have only scare chance of survival. It is,

therefore, necessary for the effectiveness of the Commissions that persons who are appointed to them should command confidence and respect in the public. Such members would be an asset to the Commissions, as they will be able not only to maintain the independence of the body whose members they are but also to enhance its reputation and prestige. And it is the latter factor which matters more for sustaining the spirit of democracy and building up public morale in the country.

To remain a legitimate public institution, the Public Services Commission, which staffs thousands of officials across India who are given the power to represent the rule of law and which wields extreme power, may need to defend its immunity from any influences of political favor or retribution more so than other commissions. But the Public Services Commission is not unique among other commissions here. Most commissions[34] are established on the basis of the perceived eminence and political independence of their members, as the long and meritorious biographies of commission members – today, this is one of the most prominently placed sections of a commission website – suggest. It is the nature of commissions to accumulate people of wide, and widely respected, public repute, and it is exactly this feature which makes them prone to ornamental, rather than widely impactful, destinies.

A review of present and past national commissions reveals a bounded but flexible institutional form whose impacts can range from a figurative whisper to immediate or seismic national changes – such as when the States Reorganization Commission redrew state boundaries according to linguistic regions for much of the country in the 1950s. Mary E. John and Janaki Nair take note of this range of influence in their assessment of the infamous reports produced by several recent commissions, calling them a "peculiar genre of writing

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[34] The composition of some commissions are exceptions to the otherwise normative rule of political independence. One example is the National Commission for Scheduled Tribes, a commission which places the biographies of its members prominently on its website but depicts the eminence of its members, all BJP politicians, as a running list of achievements within the party.

that can be both marginal and influential" (2011). Similarly, commissions also alternate in their designated duties. Broadly, there are two kinds of work commissions may be tasked with. Some must perform ongoing national administrative duties, such as the Public Service Commission's staffing of the civil services or the now-defunct Planning Commission's organization of the five-year national economic plans. Alternatively, other commissions are tasked with proposing policy for a controversial issue of national significance, such as educational and employment quotas based on caste or tribal status (e.g. the Mandal Commission), economic liberalization (e.g. multiple committees chaired by Abid Hussain), the division of central and state powers and responsibilities (e.g. the Sarkaria Commission), and on higher education reform (e.g. Kothari Commission). Commissions are given highly varied powers to carry out their duties with some given investigative and prosecutorial powers (such as the Competition Commission (see Bhattacharjea and De 2012) and, though with many limitations, the Human Rights Commission (see Sebastian 1993)), the power to design and execute national infrastructure plans (e.g. the Telecom Commission) or new geographical boundaries (e.g. the States Reorganization Commission), and still others left simply to make recommendations, as the National Knowledge Commission was.

The reports of many commissions have gone largely unread, breeding "contempt without familiarity" (John and Nair 2011), but the reports of others have elicited jarring responses from the public. One example is when the recommendations of the Mandal Commission were considered, some ten years after their release, by the government for adoption into law. It is hard to find a summative historical text of contemporary India which does not mention the student riots and self-immolations which erupted in protest of caste-based and tribal reservations in education and employment. The protests, whose participants

were largely of upper-caste but lower- or middle-class standing (Mankekar 1999), were prolonged and dramatic enough to delay implementation of the Mandal recommendations and to unseat the coalition government which had proposed amending them (Khilnani 1997; Metcalf and Metcalf 2006).

What, then, within a national history brimming with commissions, was the National Knowledge Commission? And what is its legacy? Though it made hundreds of policy recommendations, most were not adopted by the government, save for a few. Several were taken up quite quickly, including a large increase in public spending on education (in the Eleventh Five-Year Plan), legislation which created an overarching regulatory body for higher education – both which had also been proposed by previous commissions – and a telecommunications network connecting all higher education institutions in the country.

What is likely the most poignant and widespread legacy of the NKC has materialized only recently in the form of *Aadhaar*, the biometric identification and banking card which is now mandatory for all Indian citizens. (The planning of *Aadhaar* was appointed as an attaché to the Planning Commission in 2009, soon after the first tenure of the NKC ended, but the program was only widely rolled out in 2017.) *Aadhaar* is referenced in some of the earliest NKC documents. It is listed, though not yet named, as an entry under "Illustrative Examples" of e-Governance from a PowerPoint presentation dated from August 4th, 2005, just several weeks after the appointment of the commission and only two days after the Prime Minister inducted it (National Knowledge Commission (NKC) of India: An Overview n.d.). The PowerPoint presentation is entitled "National Knowledge Commission: Agenda for Discussion" and is included in an overview of the commission which can be found on the NKC's website. Committee spaces, which derive from direct appointments from high-

ranking governmental officers (as opposed to wider electoral processes), have been essential

to the planning, institutionalization, and implementation of *Aadhaar*, which was also passed

as an act through parliamentary legislation in 2016, though not without subsequent legal

dispute. Chaired by Nandan Nilekani, who was first a member and then Chair of the National

Knowledge Commission, *Aadhaar* demonstrates how the National Knowledge Commission

became more than an ornamental commission meant to shine the golden rays of IT success

onto the Congress-led government which appointed it: It also gave those who participated in

it access to the machinery of the state and tools of statecraft.

Records of public debate over the Commission[35] (Agarwal 2007; Anandakrishnan

2007; Srivastava 2007; Tilak 2007; Kaushiki 2010; John and Nair 2011; Vijender Sharma

2011; Kumar 2013) suggest that most regarded the National Knowledge Commission as one

of several bodies appointed in a short period to propose reforms for higher education in India,

but the assessments of the NKC within these debates, while they guard how a vital national

resource – higher education – might be legislated, mischaracterize the larger project of which

the NKC was a part: refashioning society according to an ideology of techno-informational

citizenship. The project to broadly technologize and informationalize Indian society is

evident in the scope of the Commission's policy proposals. The NKC proposed

recommendations across a staggering number of areas within Indian society, all claiming to

improve the general knowledge resources of the nation. In education, the NKC proposed, for

instance, centralizing English instruction so to help many more people avail of employment

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[35] These debates, which confined themselves to the NKC's statements on higher education, alternatively cast the commission's recommendations as balanced if unoriginal (Anandakrishnan 2007; Agarwal 2007; John and Nair 2011), too liberalization-friendly (Tilak 2007; Vijender Sharma 2011; Kumar 2013), arbitrary and under-researched (Tilak 2007; Srivastava 2007; Kumar 2013), somewhat helpful (Agarwal 2007; John and Nair 2011), and infused with enthusiasm over high technology (Kumar 2013).

opportunities in an increasingly global and connected economy, retrofitting colleges and knowledge institutions with enhanced Internet and video-sharing connectivity, improving teacher training and pedagogy, promoting the education of girls, and expanding vocational training. But higher education was only one small component of the commission's agenda, which included all other forms of education and training, as well as many components of society far removed from educational institutions. Aside from its recommendations for education, the commission suggested greatly enhancing research funding and support, such as through the formation of a national public research funding body for the social and natural sciences, creating public knowledge resources in varying formats (e.g. knowledge portals, libraries, translation services), and instituting electronic records keeping and communication systems across many sectors, such as health, education institutions, and government. E-governance measures[36] were an important component of the policy recommendations, as the commission proposed not only total computerization of government processes, but reengineering those processes to be deployed via a singular common platform and also requesting each government institution digitize their most vital and used services within a short period of time.

Hardly concentrated to a referendum on higher education, the National Knowledge Commission, was, rather, a bounded space created to amass an IT-infused ideology which could then be imported into law and policy and thus society overall. As such, it was indeed an ornamental commission meant to shine the then-golden idiom of IT success onto the government. The events which bracket the tenure of the commission give an indication of its use as a politically opportune gesture: Appointed soon after the Congress Party had

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[36] For a critical review of some of the e-governance programming which resulted from the NKC, see Malini Ranganathan's work (2012).

commenced a new national government and in anticipation of the Eleventh Five-Year Plan, the commission was made defunct almost immediately as the next government, Narendra Modi's BJP government, assumed office. Similarly, a glance at who was appointed to serve on the committee shows how highly high-tech affiliations were regarded for the committee's functions, which were not merely about "knowledge" in a broad sense: Originally called upon by Prime Minister Manmohan Singh and cabinet member Sam Pitroda "to prepare a blueprint to tap into the enormous reservoir of our knowledge base so that our people can confidently face the challenges of the 21st century (National Knowledge Commission 2007), the National Knowledge Commission's members were generally pulled from a technocratic elite, representing domains of IT, finance, consumer goods, math, and economics. It included two charismatic tech entrepreneurs, another whose research focused on biotech, and the director of the Indian Institute of Science (a colonial-era, Indian-funded institute of higher education). Like many "knowledge for development" discourses, the NKC vaguely flouted knowledge as a source of long-term national prosperity while using it to grant experts, particularly those with backgrounds in high technology, special power and access to national political processes and the creation of public policy.

Though weighted toward high tech and science, NKC actually began with a more balanced composition but increasingly committed to specializations of high technology, mathematics, and science over time – thus prioritizing the visions of technoscience. At its outset, the committee was appointed with two seats reserved for comparatively more humanistic scholars Pratab Bhanu Mehta, an economist, and Andre Beteille, a sociologist, but this composition was shaken up by dramas over legislation for the increase of caste-based quotas. Mehta and Beteille, against numerical quotas, resigned from their positions in the

commission over the issue (Mehta and Beteille 2006; Mehta 2006), claiming that such a system of reservations went against the principles of the knowledge society they were commissioned to cultivate. P.M. Bhargava, vice-chairman of the commission and one of only two of its members who supported reservations, cited the quota issue (and, in particular, the decision of commission members to release their positions on quotas to media outlets) as sowing discord within the commission (2006). Eventually, Bhargava was removed from the commission, and the body was reconstituted with two new members, a director of a scientific institute and a mathematician (Ram 2007). These rows, not merely fodder for the gossip columns, reveal several larger political commitments of the commission, which are not as apparent in its polished reports. First, the act of several members, and the committee chairman, to utilize the high-ranking status of the National Knowledge Commission to leverage their positions on then-upcoming parliamentary legislation, shows, again, that commissions are not always above politics as they claim to be. Second, though the commission eventually advocated for a sophisticated system of affirmative action based on balancing and quantifying many sources of disadvantage (e.g. related to class, caste, wealth, gender, region), their public position on caste-based reservations aligned the commission not only with a longer history of Congress Party rule which has failed repeatedly to adequately address systemic caste violence but also, albeit silently, with newer, more pernicious political blocs of caste power. Finally, at each juncture of reconstitution, through resignations, removals, and new appointments, the National Knowledge Commission deepened its commitment to the ideals of technoscience.

As visionary, philosophical spaces, the reports of the National Knowledge Commission offer a glimpse into the deeper social imaginary of techno-informational

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citizenship held by the commission. Thus, for the remaining portion of this section, I depart from discussion of the material and legislative impacts of the KNC to explore the visions of a national future that it advocated. Ultimately I argue that discourses of knowledge and techno-informational citizenship promoted by the NKC constitute an erratic, contradictory, and often uncommitted set of ideas that are unified merely by the tenet that technology and information are central to processes of national development and, further, widely assert particular arrangements of neoliberalism, such as public-private partnerships. And much of this discursive configuration operates on a simultaneously highly selective yet broadly applicable understanding of "knowledge." Though knowledge is the definitive concept that anchors the National Knowledge Commission, it is referenced with surprising flexibility and vacuity throughout the commission's reports. Knowledge, never explicitly defined, is held as a synonym for vastly different things: primary and higher education, knowledge of English, occupational skills or training, research, information, and even "good governance." (The underlying message of how knowledge relates to good governance, however, is unclear.) However, it is important to also pay attention to what is stable – the proliferation of technoscience, particular conditions of economic liberalization, and discourses which hold knowledge to be primarily about the growth of the economy (as promoted by the World Bank).

The benefits derived from knowledge, for instance, meander throughout the NKC's recommendation documents. Consider, for example, what is perhaps the most specific statement of the 2006 Report to the Nation: "We are conscious that knowledge is about farmers having access to accurate information about water resources, land quality and fertilizers, students having access to schools and colleges of high quality relevant education

and good jobs, scientists having access to well-equipped modern libraries and laboratories, industry having access to a skilled workforce and people feeling empowered with good governance in a vibrant democracy" (National Knowledge Commission 2007, Foreword). The Commission offers a buffet of uses for knowledge. It is information that rational actors use to make decisions and support their livelihoods, it is education that leads to "good jobs," it is that which supports scientists as they do research, and it delivers an important emotion in a democracy, empowerment. Knowledge roves in the commission's recommendations between e-governance platforms, networks of Internet connectivity between education and research institutions, translation services, and nearly universal recommendations for ICT throughout sectors (e.g. "a reliable, swift, real-time health data collection system [which] is essential to enhance the quality of health care delivery in India"). In many cases, the uses of knowledge are, at minimum, performative of an advanced state of development cued through technoscientific capabilities and contraptions or, perhaps, strategic requests of state resources – financial, discursive, and institutional – to subsidize future ICT developments, in which several NKC members had significant business ties.

The order of Indian society portrayed by the Knowledge Commission is one in which, knowledge, at times spoken of as empowering individuals and enhancing their life skills and chances, more so is used to benefit businesses, the market, and business interests. The individual is often positioned as having quite an inactive relationship to knowledge in the 2009 report: everyday people absorb knowledge as it is dictated to them by educational structures, as they learn English, as they feel empowered through e-governance services, or as they are made better suited for the needs of businesses and industries, including those which have been outsourced from companies abroad. There are a few places, however, where

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citizens are imagined to take a more active role in relationship to knowledge, and much of these instances are imagined to occur through digital artifacts such as web portals where end-users "share and create a broad array of resources and services" and "exercise their rights" (National Knowledge Commission 2007, 10).

That much of the report is devoted to lamenting the inadequacy of skills for industry, from service industries to manual labor, further demonstrates its economically instrumentalist approach to knowledge. The report notes, for instance, that education in India, from primary schooling to vocational and higher education, does not sufficiently equip people with the skills needed by employment: "There is a growing demand for skilled workers but data suggests that this demand is not met by the existing system, since the skills imparted do not match employer needs" (National Knowledge Commission 2007, 14). Knowledge, as well as empowerment, is often about people getting jobs and people being educated to produce whatever the economy demands of them, as the report makes clear in several particularly telling moments, such as when it suggests that "In order to match the modern requirement of skills and competitiveness of the workforce, a massive re-branding exercise is of the highest priority" (National Knowledge Commission 2007, 42) or the commission's repeated emphasis on educational institutions teaching those skills which industry and economy demand. Even as the report devotes considerable attention to the topic of inclusivity throughout educational and other institutions, which reflects also in the variety of members of society the commission cites as consulting in the report's preparation, it dwells on what Krishna Kumar has called the "skillification" of education (2013), a process which sees the merit of knowledge and education as merely instrumental, goods which should be used for obtaining employment. Knowledge, as it is employed in the report, becomes a thinly veiled

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concept to make available enormous human capital and energies to business ventures and to develop the nation by creating employable (and employed) people, thus growing the national economy.

Though the Commission's reports repeatedly emphasize an inclusively prosperous India and wide participation and openness even in its own processes, knowledge indexes a larger set of assumptions that suggest that one knowledge is held above the rest – that of science and, especially, ICT. Despite its wide-ranging assertions about knowledge and various (at times almost random) suggestions for knowledge policies, the only sites where new knowledge is reliably created, in the report's portrayal of knowledge in India, is in the laboratories, classrooms, or industries of high technology or science. The 2006 report opens with a broadly optimistic statement about the Commission's mission to "tap into the enormous reservoir of our knowledge base so that our people can confidently face challenges of the 21st century" (National Knowledge Commission 2007, Foreword). As a statement that comes early in the document, before one knows what exactly knowledge might mean for the commission, one could read it as imparting a sense of inclusion in that perhaps together, Indian culture and Indian citizens are themselves a "vast reservoir of knowledge" and only need to be brought together, recognized, or better supported to help the nation prepare for the challenges of the 21st century. However, as one reads on, it becomes clear that the "reservoir of knowledge" being tapped into is merely that of the elites who comprise the commission and those who are identified by the commission to participate in workshops or partners of its policy exercises, for in every other domain outside of technoscience, knowledge is only to be applied, as in agriculture and industry, or transferred, as in education or e-governance, once it has been generated seemingly exclusively by scientists, technology developers, or the digital

platforms and networks which will be newly installed throughout society's institutions. This is reflected in the NKC's very paradigm for knowledge, which they map onto the following categories: "Access to Knowledge," "Knowledge Concepts," "Creation of Knowledge," "Knowledge Applications," and "Delivery of Services." The section of the report devoted to "Creation of Knowledge" – which is distinct from the other stages of the NKC's knowledge life cycle – is exemplary here. In this section, the report locates three primary areas of improvement, all envisioned as intrinsically related to science and technology: Intellectual Property Rights, Innovation, and Science and Technology. In introducing its recommendations for intellectual property rights (creating policies and institutions which would allow creators of certain technologies exclusive commercial rights to their ideas and inventions for a limited period of time) the NKC makes a broader statement about the relevance of science and technology to its understanding of economy, stating "The ability to compete in the global market depends to a large extent on the capacity to generate new ideas through innovation in science and technology, where such ideas are transformed into wealth-generating products" (National Knowledge Commission 2007, 18). In its subsequent statements on innovation and science and technology, science, technology, and commercial industry more generally are again seen as the sites where knowledge is created and monetized: "Development of Science and Technology is essential to ensure the economic and social advancement of a people…Progress in science and technology can significantly open new avenues for industry and be an engine for providing crucial knowledge services in a developing country like India. In order to be a leader in the global arena, it is imperative that India emerges as a leader in the spheres of science and technology" (National Knowledge Commission 2007, 19). Technology and science are thus not only credited as the only

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domains which generate new knowledge (and which the commission identifies as the most essential ingredient to national development) but they are the larger engines that drive a national economy.

In the promotion of education, research, as well as knowledge generation to spur the growth of the whole economy, it is clear that science and technology constitute the knowledge that matters the most. Nowhere in the reports are humanities disciplines or skills emphasized outside of the calls for universal English instruction. "An inclusive society is the foundation for a knowledge society," says the report as it introduces its "unanimous" recommendation for universal English language competency, showing that the inclusivity advanced by the commission is ensured by the boundaries of if not a monolingualism, a clear preference for English dominance (National Knowledge Commission 2007, 9). Though the report also calls for translation resources, human specialists are indicated only as much as instant and machine-aided translation solutions, and translation is further set as a means to "unlock" knowledge in non-English languages, rather than the other way around, and to employ "educated unemployed youth" (National Knowledge Commission 2007, 30). Further, the word "scientists" is often used in place of "scholars" more generally as if humanities and social scientists are not the bearers or creators of knowledge of importance to society or the nation. Illustrating this point is the frequency with which certain terms are found in the report: "science" (76) or "scientific" (19), "technology" or "technological" (73), "industry" or "industrial" (42), "social science(s)" (24). And while emphasis and reference to science is peppered throughout the report, references to social sciences occur almost exclusively in the sections of the document which propose the establishment of a National Science and Social Science Foundation (a combined three pages of a nearly 80-page document). Social science

is thus excluded in most other references to academic (or other) knowledge production and education. The term "humanities" is mentioned merely four times and "arts," just once. Finally, traditional knowledge is recognized, but it is defined as an issue of cultural identity and is deemed useful only in its possibilities for pharmaceutical development, creating patents, improving agriculture and water management, promoting tourism, and selling artisanal or other cultural commodities (National Knowledge Commission 2007, 22).

If the status and future of the nation occupies a privileged place within the idea of the knowledge society advanced by the National Knowledge Commission, government institutions occupy a tenuous place within that vision. On one hand, the NKC's reports consistently critique the government as corrupt ("rent-seeking"), inefficient, and opaque, and a general mistrust of the government within the NKC contributes to the commission's suggestions for many transfers of political process and power to private entities. Within the commission's recommendations, the central government should commit significant funding to knowledge initiatives, but those knowledge institutions and projects should be controlled outside of the government. For instance, in proposing that many universities, health centers, and research universities be connected to one another in a fast, high-powered telecommunications network, the Commission specifies the government's role as a marginal one: "The Knowledge Network should be owned by the SPV consisting of major stakeholders. Government ownership is not desirable, despite the fact that substantial funding will be from the Government" (Commission 2007, 37). Though government funding, institutional re-arrangement, and legal changes are a component of nearly all of the recommendations made by the Commission, the NKC suggests largely privatized ownership or oversight arrangements through public-private partnerships, a group of private

stakeholders, or through other private partners. Within this vision, the government, though

disparaged, *is* still quite present within the vision set forth by the NKC. It is, above all, the

source of funding for essential national improvements and programs, and it is the institution

through which new policies and programs are created. However, for the NKC, these

administrative duties are where the state's authority should stop, for those improvements,

programs, and policies should be developed, overseen, and implemented by a cadre of

corporations and NGOs. These recommendations present a particular arrangement – and

negotiation – of neoliberalism made by the National Knowledge Commission (or, rather, the

elite, private group of people who comprised it) that does not fully shirk the state but seeks to

alter its roles within governance.

Based on the way the NKC framed its recommendations discursively and in the very

graphic design of its report, it is clear that the National Knowledge Commission saw itself as

guiding the attentions and priorities of the nation towards a better future. The commission

itself repeatedly articulated its task as an inherently patriotic one: Whereas the reports of

most other commissions are circulated with simple titles, derivative of the commission name,

with simple formatting, the National Knowledge Commission set itself apart. It titled its

reports, notably, "A Report to the Nation" thus designating "the nation" as its final audience.

What is as stake (the nation and its future) is made clear throughout the discourse of the

document as well. For instance, the 2006 NKC report opens with a statement expressing the

excitement about the "potential that India has to emerge as one of the leading knowledge

societies in the world," and the Commission continues to refer to achieving a superior status

and to "leapfrogging" other countries in its national development through knowledge. In fact,

the most consistent story about knowledge that emerges from the Commission's reports is

that knowledge is essential to economic growth, perhaps, but that it *certainly* factors into how societies are ranked globally, among many indices, and the knowledge that makes quick "leapfrogging" most achievable is the knowledge offered by technology and science. Though sometimes ideas about national status and development are about achieving benefits that can be enjoyed by Indians in general, as when the Commission reports that "[p]rogress in science and technology can significantly open new avenues for industry and be an engine for providing crucial knowledge services in a developing country like India," at other times national development through knowledge generation and application seems to be more about winning a global competition of prestige and rank (National Knowledge Commission 2007, 19). Even so, repeatedly throughout these characterizations, they are almost always set in reference to the nation – and the nation's status globally, as the continual use of terms such as "our people," "our knowledge base," and "inclusion" indicate. Knowledge resources are national resources, the document suggests, and the fruits of knowledge bring prosperity to the nation as a whole.

Casting knowledge as a treasured national resource that can pave the way for prosperous futures is reinforced by the pervasive patriotic tone that echoed throughout the NKC's reports. The cover design of the reports features a bright sun with rays of light casting out across the page in all directions over darkness. Overlaid upon this image is the word "Knowledge" written in nine Indian languages (and scripts), as if knowledge is the source of energy, hope, and light. The first text included in the report is the 1900 poem by Rabindranath Tagore, "Chitto jetha bhoyshunyo," written in English:

> Where the mind is without fear and the head is held high;
> Where knowledge is free;
> Where the world has not been broken up into fragments by narrow domestic walls;

Where words come out from the depth of truth;
Where tireless striving stretches its arms towards perfection;
Where the clear stream of reason has not lost its way into the dreary desert sand of dead habit;
Where the mind is led forward by thee into ever-widening thought and action…
Into that heaven of freedom, my Father, let my country awake.

With the poem's declaration for a simultaneously free and enlightening truth, an enlightenment so true that it establishes the larger virtuousness of a world or nation ("a *heaven* of freedom" that a *country* might awaken into), the poem's message is certainly relevant for a national exercise of knowledge-focused policy recommendations. However, it's the patriotic tenor of the poem that further fortifies the heroic and virtuous place of tech in national development, a discourse and story at work throughout all of the NKC's proposals for an improved Indian society. Read-aloud at key celebrations and calls for Indian nationalism, from the moment Tagore read it to the Indian National Congress in 1917 to the many times it has been placed in films or annual celebrations of Indian independence, the strong connotation of Tagore's "Chitto jetha bhoyshunyo" with heroic nationalism is well-established. The placement of the poem, even in its much-simplified English translation, at the beginning of the National Knowledge Commission document confirms the NKC not only a resolutely and resoundingly patriotic exercise, but, also, through its many suggestions for new institutional arrangements, of statecraft.

Taken together, the National Knowledge Commission's discourses surrounding knowledge, nation, and justice fetishize knowledge and technology to the point where their meanings and purposes are inconsistent and often unknown – except as the fuel for nationalism and economic prosperity, which is seen as the principal condition for development and overall prosperity within society. The constants, however, are telling.

Privatizing government operations while using the state to legitimize recommendations which restructure many institutions within society, universal calls for digitization and computerization, a focus on supplying properly trained humans for industry, and universalizing English – these consistencies in the otherwise erratic discourse of knowledge reveal the deeper commitments of techno-informational citizenship, as framed by those who sought to enact its broad platform through the National Knowledge Commission policies, to particular arrangements of neoliberalism, the rule of experts, and Westernization.

I focus my analysis for the rest of this chapter on a relatively small entity that the National Knowledge Commission created: knowledge portals. Among the earliest of NKC's recommendations for bringing India into a leadership role in a global, 21st century knowledge society was the national digital knowledge portal concept. Out of all of the NKC's recommendations, the national knowledge portals were among the first to materialize with some portals already publicly launched and functional by the time of the commission's first report, unlike its other recommendations, which were still merely in the planning phase. That the portals were implemented so closely to the timing of the National Knowledge Commission makes them a compelling object of study, as other recommendations took many years to broker, carrying over into different political administrations and their varying priorities, if they ever materialized at all.

Portals, though they are a small sliver of the technologies and policies created in service of techno-informational citizenship, are a robust site for understanding some of the philosophies, ethical commitments, and logics such ideologies enact, particularly that of the informed citizen who is empowered by daily access to digital technology and information.

Further, unlike many other knowledge interventions, such as education reforms and language programs, proposed by the commission, which require working within already-existing infrastructures and social organizations, portals are like a blank slate into which its creators can wholly create the terms of existence for knowledge and the way it is meant to service new ideas about citizenship. As its own kind of place, the portals are, in some ways, iterations of a utopia where ideas about techno-informational citizenship can be realized.

Though the national portals that resulted tended to privilege expert knowledge in practice, online knowledge portals are one of the few places in the NKC's overall plan for techno-informational citizenship and knowledge society where individual citizens are imagined to benefit and actively participate. Elsewhere within the NKC's recommendations, citizens benefit only by gaining skills needed by corporations and employment sectors or because the opening of government practices and information and the achievements of technoscientific researchers generally improves society. The National Knowledge Commission commonly recommended knowledge portals as the preferred format for information sharing, whether it be from a central source such as the government to larger audiences or, more frequently, peer-to-peer exchanges and discussions. The word "portal" is mentioned 55 times within the NKC's 2009 policy document, and while a slight majority of these references were recommendations about national knowledge portals, the rest were for portals that were to be instituted in healthcare, education, government, within workers guilds, and for entrepreneurs. Among these was a portal which would not only rate public institutions on "standardized outcomes" but would also establish national inventories on occupational skills and skill deficiencies for 1000 trades, which would then inform "Finishing Schools" for people in the "last mile of unemployability" to acquire skills to get a

job (National Knowledge Commission 2009, 165). Portals, as a staple informational format within a philosophy of techno-informational citizenship, were proposed as, first, convenient, "one-stop-shops" for any information needed from any vantage point and, second, as exercises that would ensure government transparency. Such discourse posits the Internet as a democratizing medium and information as the necessary ingredient to solving problems of unemployment, basic resource provisioning and access, and education while fueling technological progress and data-based governance – all at a national scale. National knowledge portals played a specialized role within these larger recommendations for portals, as they were to transcend sectoral issues by covering basic universal needs, such as water, education, energy, and health. Further, portals were pitched by the NKC to be oriented toward citizens but also relevant to non-governmental institutions and industries as "decisive tool[s] in the popular movements in support of the right to information, decentralization, transparency, accountability, and people's participation" (National Knowledge Commission 2009, 39). While experts from many institutional and topical backgrounds would manage the national knowledge portals, citizens were imagined to "participate in the creation, collaboration, sharing, and discussions in a rich and meaningful way" alongside and on equal footing with businesses and NGOs (National Knowledge Commission 2009, 39). Citizen participation was gauged along with NGOs and businesses, first, to prevent an information monopoly, already observed within the government, according to the NKC, and, second, because portals were imagined to make available information that could be useful to someone of any subject-position.

WaterWeb Media (English), 2005-2015

For the next section of the chapter, I analyze a selection of WaterWeb content by touring its shifts from 2005-2015. WaterWeb oversees water portals in three languages, English (commenced in 2005), Hindi (commenced in 2009), and Kannada (newly launched in 2015). Each portal features wholly different, non-overlapping material and is run by separate management teams with vastly different goals and values. While I briefly address differences between the portals, my analysis here focuses primarily on the English portal.

The arguments in this section of the chapter are based on a media analysis of WaterWeb's published pieces between the years of 2005 and 2015, as well as a survey of its end-users (conducted in 2015) and Google web analytics, software which reports on patterns in site visitation and traffic. To compile my media samples for the English portal, I collected the 50 most-read pages from the site over three periods (2010-2011, 2012-13, and 2014), a total of 150 pieces of content, according to Google Analytics as well as a random media sample of 75 pieces of portal content. To compile the random media sample, I searched for the word "water" within odd-numbered years, which brought up all media published by the portal in a given year. I then selected every fifth entry from the search results for inclusion in the sample. While a media analysis of these samples, one random and another assembled by rank of popularity, does not capture the way most end-users reach or, much more rarely, navigate the site (through Internet searches and, more recently, links circulated on social media and the portal's weekly newsletter), it does capture both a generalized and the most visited selection of the portal's content over time. Additional to the media analysis, I also present the results of a user survey that I conducted. The survey posed 25 questions to end-

users about their uses of the portal and their personal backgrounds. The survey received responses from 633 respondents, and my discussion here is based on those replies.

This section of the chapter commences with a description of the shifts in the portal's content over its first 10 years and then concludes with an analysis of that media. Ultimately I argue that over the first ten years of its existence and despite the NKC's initial idealized vision for portals as comprehensive, all-accessible informational utopias, WaterWeb (English) crystallized into an almost exclusively managerial domain with information created by and/or for experts. In turn, the place of non-specialist citizens became not to share knowledge or even to direct its inquiries and investigations, but, rather, merely to accept the knowledge and narratives determined by the expertise designated by the portal staff. This trajectory is one that runs contrary to many efforts and intentions of those who work on the portal, a topic that I take up at the end of this chapter, and despite the original ideal of the portal as a space for open-ended, citizen-centered inquiry and discovery.

The homepage of WaterWeb is a collection of drop-down menus and links to original stories, re-circulated news articles, datasets, and a Twitter feed. These features, along with a smartly designed typographic color scheme of turquoise and grayscale, have remained more or less constant despite several redesigns of the portal over the years. At the time of this ethnographic research, in 2014 and early 2015, the portal's homepage design emphasized colorful images: A photograph-based header, titled "Picks of the Week," dominated the top of the webpage and rotated through previews of recently published original articles. Scrolling down the page, one could peruse, on the left, links to featured articles and questions set next to a large thumbnail image and, on the right, WaterWeb's Twitter feed. Scrolling down even

further were lists of "All-Time Favourite" articles, which were updated quite frequently, and

datasets, which were not. The footer of the webpage sat in a cartoon-like aquamarine sea

graphic and linked to various administrative sections of the site: a contact information page, a

description of the organization, a link to sign up for the weekly newsletter. By late 2015, a

different design greeted visitors that was more text-dominated and placed more aspects of the

website's content in navigable view. These boxes of headlines and hyperlinks give an

impression of uniformity, which can mislead one from recognizing the infinitely layered and

varied nature of content and its accumulation over the years. Site redesigns such as the one in

2015, too, often took much more labor than a disappearing ocean footer or typographic shift

might suggest. They relied often on weeks if not months of meetings with portal staff who,

on the basis of Google Analytics data (e.g. average page load time) or evolving editorial

philosophies, designated new priorities for the site. In 2015, new priorities included

achieving an aesthetic (i.e. branding) consistency across WaterWeb portals and helping end-

users more easily navigate what had become an enormous repository of content which

spanned many genres of writing and media forms.

When it began, WaterWeb did not have these challenges. When it started, WaterWeb was overseen by just one person and forwarded a marginal amount of content derived from other sources, but in the first ten years of its existence, WaterWeb

Figure 1. The number of published posts per year on the WaterWeb.

grew to publish original pieces, datasets and automatic tools to analyze data, and news and

policy updates in multiple languages, largely because of the daily labors of a staff of over 25 people. These ten years were, first, marked by a trajectory toward an increasing centralization of expertise and professionalization and then, due to changes in Internet search ranking policies, a shift toward human-interest stories told in a large variety of media formats and narrative structures. Below I give, first, a brief overview of portal media to show how these shifts occurred over time and, subsequently, an extended analysis of these changes in portal media.

2005: For the first two years of its existence, starting with its launch in 2005, WaterWeb published merely 15-20 pieces of content per year, which suggests that it had been started practically in name only. During 2005, all entries in the random sample share the same format (pdf document), source (an existing knowledge exchange listserv, Solution Exchange), and textual structure (a solution-seeking query about a development practice or approach). A sample of the content typical of these early years is shown below (Figure 3), though the truly substantial information comes within the circulated pdf documents from Solution Exchange. These longer documents feature 8-12 curated pages of responses from experts, suggested case studies, and additional resources in specific answer to the query at hand. In response to an inquiry on providing quality drinking water, for instance, Solution Exchange compiled a 9-page response pooling together seven specific expert responses, ranging from representatives of the Asian Development Bank to the International Water Management Institute (based in Sri Lanka), and Development Alternatives (based in New Delhi) – in other words, responses from various positions of technical expertise within a large development apparatus spread across India and Asia. The document summarizes

purification techniques, frequently referencing and hyperlinking to both online and print resources as well as suggested persons of contact for further consultation and deeper answers. Finally, it provides its respondents' text in full.

2007: In WaterWeb's third year of operations, both the total amount and variety of media published increased from earlier years, though, with under 200 pieces of content published this year, the portal still appears to have been a small, almost household media enterprise. The pieces of content in the random sample depict a portal that was still forwarding quite a bit of media as its posted content, but, unlike 2005, it expanded its sources beyond Solution Exchange to include popular outlets such as *The Hindu*, a national newspaper, and *Down to Earth*, a well-read Indian environmental magazine.

But the forwarded material of experts and existing media institutions only comprises about half of WaterWeb's published content during this year. Most of this other content consists largely of questions and ideas posed by citizens – and this time, to WaterWeb itself – many who are facing an acute water problem: a farmer who lived in a hilly area of Maharashtra sought help to plan a well so that he would no longer need to travel 1-2 km for water every day; a resident of Chennai asked about the standards for planning sewage pipes, as his neighbor was proposing to install a sewage line directly above the drinking water pipe that ran through the neighborhood, potentially risking contamination of the area's drinking water. Finally, there is an application for a training program in water quality run by a non-profit organization and two small pieces authored by "WaterWeb." Of the material written by "WaterWeb" is a short announcement about another water portal and a brief description,

written in the first-person, of a site visit to two villages in Chhattisgarh that have won awards for admirable sanitation.

2009: During its fifth year, WaterWeb made a leap into mass publishing and established a much more expansive informational world by circulating over 3,600 pieces of content during 2009 in comparison to significantly smaller batches in previous years (656 pieces of content in 2008, 196 in 2007, 20 and 15 in 2006 and 2005 respectively). In this year, one starts to see a broad professionalization solidify across the portal, assuming the forms of conference or event announcements and summaries (these comprised 36% of the media sample from this year) and reports written by non-profit and government entities but summarized often by WaterWeb staff (43% of the sample). The genres and media formats which emerge for the first time in this year in the sample include official reports or policy descriptions, detailed site visit descriptions that articulate development problems and solutions, encyclopedic policy overviews, job announcements, many conference announcements and proceedings, and forwarded publications. The few staff-authored pieces were marked by originality, thoughtfulness, and authority that were lacking in previous original pieces by portal staff. Correspondingly, circulated articles from mainstream media sources are few at this time.

2011: The articles in the 2011 sample continue in the direction first established in 2005 and later fortified in 2009 – the discourses and formats of development professionals (reports, announcements, newsletters) feature predominantly, accounting for roughly the same percentage (42%) as entries during the media sample from 2009. By 2011, however,

the staffing of the portal had begun to expand and specialize, which further professionalized the platform in its editorial policies, branding, and new media products rather than in its expertise on water-related topics. This is the first year in which a portal newsletter appears. Offering an overview of recent content published, the categories featured in the newsletter give a glimpse into the genres and topics covered by the portal in this time period: blogs, news, policy updates, a category called "Knowledge" that features development reports with extended description or commentary by a water sector specialist (now also on staff), and an "Ask the Experts" section formalized the previous Q&A entries of past years into its own section with multiple replies from managerial experts. The portal's own newsletters and event announcements accounted for one third of the material in the sample from 2011.

During this year the portal began to commit to particular positions in its content. Critiques of large infrastructure projects (especially dams), privatization, and government actions and policies became consistent, and social justice emerged as a priority across re-circulated material, especially from popular media sources. No longer were just any articles referencing water re-circulated; instead, those featuring prominent water activists or which investigated water-related injustices account for most re-circulated materials during this year's sample.

More than an emerging genre or format, during this period, the portal began to plan live events and share data, including datasets and web-based data analysis tools, into its information dissemination and sourcing. Going much beyond datasets and tools, which, together with new forms of media such as short films, was a move that diversified the overall managerial tone of the platform. Such media, while adhering to set development priorities and interests like lake restoration, water purification, and rainwater harvesting, often shifted

the voices and media forms that narrated development problems and their solutions

established in previous years.

2013: While development discourse and reports continued to be circulated by the

portal, much more common during this time period were long-form original stories written

by a variety of staff. Its newsletters, too, reflected these changes, which were simplified to

promote recently published original feature stories and regular news and policy roundups.

Often person- or place-focused, these original feature stories almost completely dominate the

selection of media promoted by the portal in its 2013 newsletters; however, in the

randomized sample, these original pieces only constitute a smaller fraction of the portal's

content, roughly 25% of the sample. What occurs more frequently in the random media

sample are items seen in previous years: development reports and announcements balanced

with re-circulated items related to current news and policy (often in a roundup form now). In

addition to stories that devoted concentrated attention to people and places associated with a

development quandary or solution, another genre of story emerged for the portal during this

year of the sample – the data story, which takes data published on the portal and converts it

into a written story or analysis. The data story emerged after portal staff found that while

audiences were interested in datasets, most people did not engage with this newly developing

region of the platform. Data stories, however, could help people make sense of data that was

newly available. The use of photographs also shifts in the portal's media this year: While a

single photograph, in past years, might have accompanied a story as a visual, by 2013, not

only are most photographs original (rather than the stock photos often used in the past),

photographs are also sequenced to tell an unfolding story, much like a photo essay. Stories often also include links to a larger collection of photographs taken for the story.

2015: In keeping with the changes that occurred during 2013, the media sample from 2015 suggests that the portal continued to prioritize the original work of the large staff established a couple of years earlier, several who have continued to write for the portal in subsequent years. This shift is not only represented in the articles featured by the newsletter, as it was two years earlier, but it also structured the media sample from the year as well (unlike for 2013) with original articles or staff-curated news and policy round-ups comprising 77% of the sample. Only 15% of the sample consisted of re-circulated articles from popular sources and 8% were development reports or case studies. By 2015, the portal's original stories had become *even more* person- and place-focused, a shift in part supported by a great expansion in the kinds of textual forms a story could take. In 2015's sample, for instance, there was a water-related movie review, three interviews with artists (two videographers and one poet) as well as samples of their work, and a tribute to a recently deceased politician (and his takes on water), in addition to several conference announcements and original pieces critiquing a development policy or technology. The stories that cover a particular water problem or solution are written entirely from the vantage point of human interest with people within a locality featured as principal characters and forces.

The media world of WaterWeb established a highly specific signature of language and documents, which developed quite differently than what was proposed by the National Knowledge Commission. While the NKC proposed portals as "one-stop shops" for all

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information and documents that could assist policy, purchasing, building, or planning decisions made by anyone, from a state legislator to a small-scale farmer, as it evolved, the portal specialized in, rather, recirculated news and development reports, human-interest stories, and visual media – information that is more useful in cultivating sentiments or specific awarenesses about water rather than aiding actual decision-making or planning exercises. While the NKC imagined portals to be sites where anyone from development managers to farmers could share information about best practices for water use, what WaterWeb offers is quite different – original stories about challenges related to water, news and policy briefings, and polished reports and programmatic products of NGOs, much of which could be considered promotional material. And while some reports *might* offer information useful for decision-making for NGOs or, perhaps, for public policies, the portal hardly provides the kinds of details needed for decision-making in homes or small businesses (as its Q&A sections indicate). In this way, the portal began in the NKC as one kind of fetish, characterized by intense desire and an inability to accurately discern the object (here, expert knowledge and digital technologies) of one's obsession, but ultimately turned, in part, into a very different kind of fetish, as its human-interest framings of development stories obscured the relationships, inequalities, and power dynamics within the larger system of development labor.

Although the last five years of the period I analyze featured attempts by portal staff to humanize the portal and make it more accessible to the public, there has also been, throughout the first ten years of the portal's existence, a tendency to centralize experts and expert narratives, which effectively reduced the range of voices and contributions of non-specialist citizens on the platform, as I demonstrate below. In its pursuit of expert

participation and authority, WaterWeb staff reduced, both directly and indirectly, the space for non-specialist users and contributors. For instance, they intentionally limited the ability of users to post content, including questions, assessing the responsibility of moderating such contributions as too large to assume. (Often, the values of comments posted by users were not aligned with those of the portal even though such confrontations may have inadvertently driven the portal toward more established editorial positions on particular issues.) Actions taken to limit commenting (possible for registered members of the platform) and posting (only through moderation) were in continual tension with interests held by the board and managers of the portal to improve audience engagement and, perhaps eventually, to transform the portal into a publicly controlled entity or commons.

Fortification of the Expert

From its earliest years, WaterWeb solidified a trajectory toward centralizing expert knowledge. In its first year, 2005, the content of WaterWeb was exclusively comprised of the content of another online community, called Solution Exchange, also launched in the same year. Solution Exchange's reports always began with an extended query about water (most from 2005 are multiple paragraphs long, see Image 2). Reports would then feature the identities of respondents who offered answers, a summary of responses, followed by lists of

All human beings require a daily intake of about 2 litres per person, essential to expel the toxins accumulated with the intake of solids and or liquids, most of which now have heavy metal and other residues, higher than the minimum acceptable levels and therefore a cause of many terminal diseases.

The water provided by the water management boards is treated with chemicals to make it "safe" and frequently also gets contaminated with sewage water, particularly during the monsoons.

The "solution" as seen in the last decade, has been the shift to household electric water purifiers and high cost bottled drinking water (safe but 'dead' water) affordable only by a few. Surely this is not a solution, as it does not compare with the quality found in pure mountain streams & springs. This is the quality we should be aiming for and need to replicate as it would be one of the major factors in the good health of the nation.

My query is: Does anybody have a **simple, inexpensive and sustainable solution that can be used to provide quality, chemically free and safe drinking water**? If so, what are your **experiences** and the **issues** that you are facing in getting your solution adopted?

Please see attachment below for the responses.

Image 2. An inquiry and resulting compilation of expert opinion facilitated and circulated by Solution Exchange, a typical example of published content on the WaterWeb in 2005.

recommended resources (contacts, reports or "documentation," websites, and organizations), and then finally the expert responses in full. Expertise appears to have been of paramount importance to the compilation of reports. Each participant, including the querants, are listed by their affiliations with reputable or specialist organizations. Most of the questions which were submitted in 2005 were submitted by professionals working within water management agencies or development organizations, and the affiliations of respondents are similar, spanning the IITs, UNICEF, various universities, and development organizations. The recommended resources for consultation are drawn from similar sources (e.g. studies conducted by IIT research groups, World Health Organization (WHO) fact sheets, papers in relevant academic journals), and they are all hyperlinked to existing websites or PDF documents on the Solution Exchange website. However, it is important to recognize that, even if forwarded, these conversation strands were actively chosen by WaterWeb's small staff (1-2 people) at the time. If Solution Exchange was modeling an iteration of the digital knowledge community as one of active expert consultancy wherein numerous experts provide answers to a querying public and wherein knowledge is located in the reflections of experts as well as published case studies and academic papers, WaterWeb was, at this time, modeling a knowledge community that could identify and circulate such manifestations of expertise and discussion. However, hardly filling out the informational utopia imagined by the NKC, wherein people of all subject-positions could come to create, share, learn, and walk away with some new or valuable insight, WaterWeb set an initial course for its informational world by dropping compilations of expert knowledge compiled elsewhere.

After two years, the portal was building a small repository of forwarded articles from popular news outlets, water sector announcements, and also hosting original queries. For each query, one sees at least one managerial expert, even some government representatives,

Image 3. A sample of content from 2007: A WaterWeb user inquiry, a re-circulated article, and an originally written field visit summary.

responding simply and thoughtfully to the post in the comments section. In one example shown in Image 3, "Minimum distance between sewage and drinking water lines," both a senior environmental planner in association with an academic institution as well as a representative of the Central Water Commission, a government agency, offer extended responses. This time, though, the query appears to be from a layperson, Chandrani Biswas, inquiring about the dangers of installing sewage and water lines too closely together, near his residence. Here, again, the expert is anchored as a fundamental part of the portal, though in an interesting way – a way that literally provides conversational access to academic, engineering, and governmental experts who might otherwise be unavailable to a question-posing public. There continues to be a centralization of experts; however, unlike with Solution Exchange pieces, WaterWeb began facilitating conversations between non-experts and specialists.

By 2009, however, professionals almost completely dominate the portal's online dialogue. Discussions, such as the one between Chandrani Biswas, a Central Water Commission official, and an environmental planner, do not occur within the media sample, nor do any original comments for that matter. The fortification of the portal as a site for and by professionals is evidenced also in the kind of material circulated by the portal at this time – conference announcements, brief news articles, site visit summaries, development reports, almost all genres of writing specific to development institutions, such as those which comprised portions of the networks of expertise featured in the early compilations of Solution Exchange. That literary forms specific to professional and organizational modes of production begin to flourish on the platform during this time suggests that either development experts started to make up almost all of the portal's assumed or intended

National water policy and state water policy of Assam, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh

Authored Government Government Government Government Government Government Government Government Government Gov
By : of India, of Assam, of Himachal of. of Kerala, of Madhya of. of Punjab, of of U
Pradesh, Karnataka, Pradesh, Maharashtra, Rajasthan, Pra

Posted Date : Tue, 2009-06-02 10:33

The article is a compilation of national and state water policies alongwith a critique of national water policy (2002) by Ranjit Devraj.

National water policy, 2002 Read policy

National water policy, 1987 Read policy

Also view critique of National Water Policy (2002) by Ranjit Devraj, a correspondent with Inter Press Service. He feels that the new Policy emphasises continued government control over water resources, ignoring pleas by environmental groups to involve local communities in order to overcome looming water shortages. Read more

Assam state water policy, 2007

Assam state water policy is prescribed in accordance to the guidelines and general directions in the National Water Policy - 2002, keeping in view the specific necessity for the State of Assam. In view of the inter-State water disputes, the State Water Policy has specific importance. The Policy envisages a long-term water resource management program designed to develop a critical mass of indigenous productivity with the requisite technical , economic and sociocultural means for sustainable development.

It adopts integrated water resource management as a core strategy, based on the principles of water as a finite resource, need to use a participatory approach, the crucial role of men and women, ensuring clean water for human health and looking at water both as an economic and social good. The first priority in the strategy would, however, be development of a systematic knowledge base to examine the current understanding of integrated freshwater management quantitatively and qualitatively.

In the planning and operation of the systems, water allocation priorities would be broadly as follows: (1) Drinking and domestic use (2) Sustaining livelihoods - aquaculture, cottage industries (3) Sustaining environment, maintaining river systems, wetland systems and aquatic life (4) Irrigation and hydropower (5) Agro-based and rural industries (6) Thermal power and industries (7) Recreation and religious uses and (8) Navigation and other uses.

The detailed action program on the following are provided –

    Partnership with Communities in Water Resources Management

    Water Quality and Quantity Monitoring

    Financing Projects and Water Service Charges

    Project Implementation and Monitoring

    Safety

    Disaster Management

    Rainwater Harvesting and Water Conservation

    Legislation and Regulation

    Training, Research and Science & Technology

    Water Literacy and Awareness Generation

The policy also details the proposed strategic administrative initiatives and institutional mechanisms -

    State Water Resources Board/Council

    State Water Resources Development Authority

Read policy

Himachal Pradesh state water policy, 2005

Himachal Pradesh state water policy was brought out in 2005 as the efforts to develop, conserve, utilize and manage this important resource in a sustainable manner have to be guided by the State's perspective.

In Himachal Pradesh availability of water is highly uneven in both space and time. Planning and implementation of water related projects has many socio-economic aspects and issues such as environmental sustainability, resettlement and rehabilitation of project-affected people and livestock, public health concerns of water impoundment, dam safety etc. The State Water Policy provides clear guidelines on these matters.

Moreover, certain problems and weaknesses have affected the water resources projects that have been implemented or are in the process of implementation in the State. Complex issues of equity and social justice in regard to water usage and distribution have to be addressed systematically. The development and exploitation of the groundwater resources in the state have raised concerns about the need for scientific management and conservation.

Some points made in the State Water Policy are –

    The state water policy must be implemented in a manner that promotes a participatory approach and involves local communities and stakeholders, including women, in the management of water resources, in an effective and decisive manner in various aspects of planning, design, development and management of the water related schemes.

    Necessary legal and institutional changes shall be made at various levels for the purpose, duly ensuring more meaningful decision making roles for women. Water Users' Associations and the local bodies such as municipalities and gram panchayats shall particularly be involved in the operation, maintenance and the management of water related infrastructure/facilities at appropriate levels, progressively, with a view to eventually transfer the management of such facilities to the user groups/local bodies.

    Private sector participation may also be encouraged wherever feasible in planning, development and management of the water resources for the usage of the general public and the community.

    A standardized state information system should be established with a network of data banks and data bases, integrating the State and Central level agencies and improving the quality of data collection and analysis.

    In the planning and operation of systems, water allocation priorities should be broadly as follows: (1) Drinking water (2) Irrigation (3) Ecology/ Afforestation/ Biodiversity/ Tourism (4) Agro-industries (5) Hydropower (6) Non-agro-based industries and (7) Navigation and other uses. Read policy

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A village in Tamil Nadu realises the necessity of hygiene and sanitation for health and dignity of women

Posted Date : Wed, 2009-12-23 15:36
0 Comments

A rural village in South India realizes, day-by-day, the necessity of appropriate hygiene and improved sanitation for the good health of all people and the dignity of women.

Through a maze of winding, curving roads off a main highway in Tamil Nadu, one must travel to reach the small, agrarian village of Muthampatti. This village recently received sanitation (and water) interventions by (an NGO established to empower rural people for positive social and economic change with the support of Mahatma Gandhi), through a program offered in twelve villages with funding provided by   . They offer hygiene-awareness activities, sanitation (and water) trainings, and furnish low-interest loans for construction of toilets. Around 20 households had toilets before their work in the village, and 30 more households have agreed to construct toilets after their efforts. The remaining 20-plus households in the village are unable to build toilets because of limited space, lack of money, or a general unwillingness. Inadequate sanitation impacts women negatively, but involving women in promotion of appropriate hygiene and improved sanitation helps women, men, and children in numerous ways.

Fields, huts, farmers, goats, women, houses, trains, children, mud roads, temples, streets, churches, men, and schools are seen in all directions. Muthampatti is situated between a wealthier village, a spread of fields, and another settlement over a concrete bridge. People have defecated in the open here for generations. Six years ago, most women used a piece of land with a thicket of bushes for privacy. They were restricted entry to this location after the land was sold. Other village members relieved themselves in neighboring fields, and farmers would yell at them. People eventually began using an empty canal bordering the Scheduled-Caste (SC) section of the village.

The canal is practically the only option left for those without toilets. There are hundreds of people and limited space. A middle-aged woman describes the canal:

"It will be quite disgusting especially during the rainy times, not only will they have [fecal matter] all on their waist... the entire path will be strewn with fecal matter. All the cloth that they use while they have menstrual cycles, all that cloth will be strewn there, as well. It's unhygienic and disgusting and it takes a lot of effort to find somewhere that is not so gross to [defecate]."

Both women and men use the canal. A natural division of women's and men's sides has occurred. This helps protect the privacy of women slightly, but men sometimes use the women's area. "There are men around," asserts a woman who rents a house from her uncle, "and it's not very nice." She wakes up at 5:00 am to use the canal before the men rise. Plenty of women visit the canal in the pitch-dark by torchlight. There are instances where women have been bitten by snakes or insects. She says, "It is frightening to go down in the dark."

The location of the canal near SC habitations increases disease transmission during the rainy season. One family of brothers and sisters remembers the stench from the canal. Amid torrential downpours, water filled with human feces would wash into the pathway in front of their one-room home. A wall was built to protect the dwellings, but illnesses continue to multiply. Aliments like diarrhea, cholera, typhoid, polio, and hepatitis are spread through contaminated fecal matter. The eldest brother said, "We are more aware and we wear [shoes] when we go to defecate, but other people are not aware and they do not wear [shoes]." Nearly the whole village had diarrhea before festival season this year. Women are caretakers of those sick in households. If the elderly, men, or children fall ill, they relinquish income-generating duties to take care of those sick.

To counter hardships – the spread of illnesses and challenges faced by women – from inadequate sanitation,   shares knowledge about appropriate hygiene and improved sanitation. They hold street-theater programs on sanitation-related illnesses, difficulties faced by females from poor sanitation, and proper waste-water disposal. They host a variety of trainings on topics including, but not limited to, hand-washing and menstruation hygiene.   interacts with groups of women called Self-Help Groups to impart information about appropriate hygiene and improved sanitation. Involvement of women is integral. Women are primary managers of hygiene and sanitation in their homes. It is generally women that raise and care for children, care for elderly, clean bathrooms, and fetch water. When women become more informed, everyone becomes more informed.

          is engaged in progressive efforts for hygiene and sanitation, but almost a third of the households in Muthampatti are unable or unwilling to construct toilets. "There's not enough room to build a toilet," one woman exclaims. Many homes are located down narrow walking paths with minimal clearance between the house next door. Multiple families do not have enough money to build a toilet. Average annual incomes in the village range from Rs 7,000 to Rs 110,000 (150 to 2,350 USD). A few people have a toilet, but refuse to use them. A 'paati' (meaning grandmother in Tamil) declares, "I still practice open defecation, but my daughter and granddaughter use the toilet. I'm not used to it. It's for the younger generation."

Solutions to barriers preventing individuals in the community from embracing appropriate hygiene and improved sanitation exist. A small number of people in the village would like a community toilet for those without room to build. Several people wonder, "who would keep the community toilet clean."   gives low-interest loans for toilet construction from a revolving fund. These loans help families afford the cost of building toilets typically around Rs 4,000 (86 USD). Women are employed for construction of toilets, and this allows them to earn additional income. General awareness change, for village members who do not want to use toilets because of prevailing notions, is a slower process.

Involving women in this awareness change is key to success for any hygiene or sanitation program. An 'amma' (meaning mother in Tamil) states, "I built it because I have two children. They cannot go to the bathroom outside. My children are educated." Women should be included in all aspects of hygiene and sanitation programs from planning to management. At the same, women reap substantial benefits from appropriate hygiene and improved sanitation through a reduction of illnesses of family members, having a location to manage menstrual cycles, increased safety from animal bites or sexual assaults encountered while defecating in the open, and a greater sense of dignity gained by using the bathroom in privacy.

If you would like more information about   , please use the contact information below.

Speakers and presentations at the IWMI : Bharat Sharma speaks on the use of GIS for estimating basin level water productivity

Image 4. Content common on the portal in 2009: A summary of state water policies, a reflective originally written piece (site visit summary), and a workshop summary.

audience or that many development organizations have started to recognize the portal as an

important online platform for disseminating their announcements and materials. Similarly,

while scientific and high-level policy affiliations mapped the domains of preferred and participating expertise in the portal's earliest years, by 2009, that domain heavily shifted toward the expertise and presence of development NGOs. Though the portal expanded the sources from which it circulated expertise, knowledge of interest to the development practitioner or professional seems to increasingly occupy the portal's media space.

Patterns in staffing of the portal and their appearance on the portal offer insight to what kinds of expertise were seen as important. These inclinations went in two primary directions: at times, the portal sought to achieve epistemic authority on the topic of water and, in other moments, it focused on acquiring the administrative and content production skills that would befit a professional media enterprise. Again, a glimpse at how the portal developed over time gives a glimpse into how these preferences for particular expertise formed.

Tracking the earliest instances of the "WaterWeb" as an author may reveal some of the reasoning behind anchoring the platform with expert knowledge. During its first years, from 2005-2009 especially, many of the posts authored by portal staff (under "WaterWeb," "admin," or "ww") simply re-circulate expert knowledge in the form of comments, reports, articles, and summaries. Occasionally, portal authors summarized expert opinion or research, facilitated expert analysis of that material, and even called for more experts to contribute, as with a 2009 post entitled "Unhappy news from new studies on India's groundwater." Further, when the "admin" moniker appears within the comments section, and it does so rarely, it often seems to forward text from an expert or a published journal article written by experts.

Even at these moments, the portal's end-users, at times, make overt challenges to WaterWeb's epistemic authority. Consider the same 2009 post on groundwater research. The

article summarizes two then-recently published academic articles, one in *Nature* and another

in *Geophysical Research Letters*, both of which are based on a NASA study which estimated,

based on satellite measurements of shifts in gravity, that groundwater in northwestern India

to be severely depleted and depleting at a rate 70% faster than the previous decate. At the

conclusion of the summary, "WaterWeb" refers readers to a commentary authored by an

expert on water issues, particularly on the topic of dams and water privatization, and also

poses its own questions and makes a call to publicize the debate, saying:

> This is pretty much the first attempt to deduce groundwater status information
> from gravity change data. How are the results to be seen in this
> situation?**We already knew that groundwater depletion was a big problem.
> Is this study corroborative or conflicting with other sources of information ?
> For eg. The article above says that the rate of groundwater extraction is 70%
> more than CGWB's estimates for the mid-90s ? Can someone explicate on
> this? ** Groundwater depletion was also seen as a big problem in peninsular
> India, whereas these results say the problem is worst in N. India ** If anyone
> can forward hard or softcopies of the original articles to the Water Portal,
> these can be made available to the wider public. … We request all who are
> competent in the above areas to comment !

Aside from a comment from a user seeking to disseminate a software program called

"Watershed A to Z," there is only one other comment on the post. The comment, from a Mr.

Chetan Pandit, whose affiliation is left undisclosed, addresses several questions posed by

"WaterWeb," but it does so while further disparaging its epistemic authority within the topic

of water. Pandit wrote,

> As the saying goes, half knowledge is a dangerous thing. Internet places
> information in the public domain, where it may be read by any one, including
> those who are not necessarily competent to evaluate it. An information sheet
> that often accompanies prescription medicines, clearly says "For use by a
> Registered Medical Practitioner Only". One wishes that the authors of the two
> recent articles on depletion of ground water in North India had placed some
> similar warning – "For use by a competent hydrologist only".

Then, after explaining how much of science is merely about exploring hypotheses, which are only validated as "confirmed truth" after a long process, Pandit makes several critiques of the scientific papers: Several of their observations do not match what he calls "the ground truth," or groundwater levels known in several geographic regions; the findings do not distinguish between dynamic and static groundwater; and Pandit critiques the idea that gravity would fluctuate depending on pumping and irrigation activities. Finally, he dismisses the reports as alarmist, saying "Thus, while GW depletion should be high on our list of concerns, it would be alarmist to take the report at face value. Let the experts examine it first." There are no responses following Pandit's comment. What foregrounded this exchange is that WaterWeb staff centralized expert knowledge – first in selecting the two scientific papers for summary and then calling for "all who are competent in the above areas" to offer their assessments. But in so doing, portal staff made attempts to take expert knowledge and further contributions from experts to cultivate an improved understanding of groundwater and scientific claims among a wider public. Yet, this gesture did not generate a forum of "competent" dialogue for others to learn form. Rather, it produced one response which, though providing some specialized assessment of the two academic papers, dismissed the abilities of "WaterWeb" to provide its own.

Elsewhere in the first years, "WaterWeb" appears to have little expertise of its own to offer. One example is found in an article from 2007, one of the first original pieces for the portal. It is a largely uninformative description of a site visit to two villages in Chhattisgarh that won awards for admirable sanitation. The three-paragraph article focuses more on the beauty of the region and the nature of the trip as a holiday rather than detailing the water or sanitation management techniques of the village, which was the stated purpose of the visit,

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starting the piece with, "Just got back from a trip home (Chhattisgarh). Enjoyed an extended holiday, a large part of which was spent working! But since work was closely tied with a pleasure trip, had a good time." Though the article does include mention and photographs of a latrine and slabs covering a waste canal, it does little to describe how these contribute to the village's sanitation but only to its pleasant appearance:

> A few years back, the President of the Nagar Palika had initiated a programme to repair the drains in the residential areas of the town. The regular open drains were replaced with semi-circular pipes that were covered with RCC slabs. Every fourth slab had a few holes in it to allow rainwater to flow into it. This initiative, though simple, proved effective in improving the look of the town, widening the road (the slabs were like an extension of the road), preventing solid waste from clogging the drains, preventing breeding of mosquitos etc.

"WaterWeb" closes the article with a brief summary of how the trip ended with a 10-hour delay because of a flood that covered the road. In the comments section is an exchange between one of the portal's advisors, who offers brief praise and suggestions for how to improve the piece, and the author, who accepts his suggestions (but the article remains unchanged). Here we see an example of portal staff posing as both writer and moderator of a public water forum and receiving coaching on how to do so, again within the comments section.
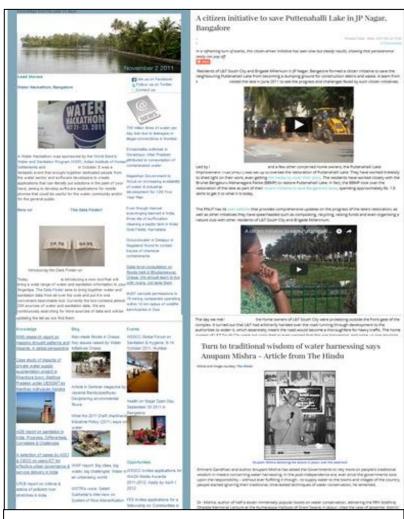
The few appearances of WaterWeb's staff in the creation of content for the portal reveal that locating and circulating expert knowledge was most quite possibly a gesture of necessity in a larger claim to epistemic authority over a topic that they needed to facilitate on a national scale, water. This need is understandable, as WaterWeb only had one full-time manager at the time with a couple of part-time support staff. Though the manager at the time would come to play a leading role in WaterWeb's parent organization and would also

accumulate years of experience working on sanitation and water development programs, at this time no portal staff member had much experience in writing about or working on water issues.

As the portal took a turn toward becoming a burgeoning platform for development professionals, the discourses and framings of water and development in the portal's media, too, became much more sophisticated and specific in 2009 than in the 2007 and 2005 samples. Many forwarded resources, unlike previous years, are accompanied by a thorough and highly professional summary or evaluation, which followed from the increased professionalization of WaterWeb staff, still the small size of previous years, and also suggests that portal staff began to trust that its audiences were interested in sophisticated summaries. In efforts of further professionalizing the portal itself, the organization also, by 2009, had started an internship program. The work of one intern appeared in the form of a detailed site visit to a program funded by WaterWeb's host organization. In such original contributions to the platform, WaterWeb seems to have started to depart from previous years in which outside experts stand in as its authoritative voice. Its original articles start to be markedly considerate and thoughtful: One piece offers a summary of glacial outburst floods through an interview with a farmer who lived through such an event. In another piece, the site visit written by an intern, who was a Master's student in an American public health program, considers the various costs of open defecation for women in a Tamil village even though the article presents open defecation in the standard frames dictated by development discourse – dis/empowerment, disgust, toilet installation as a singular development goal which villagers must be converted into supporting, cleanliness as a public action problem, and disease transmission.

These changes – posting more sophisticated summaries, original writing, and featuring stories of individuals and organizations – were supported by vast changes in the portal's staffing and continued into 2013 and 2015 as well. At first WaterWeb expanded its administrative staff by hiring content managers, outreach and branding specialists, and a data expert (2009-2011). By 2013, an even larger staff structure had materialized with a full-time editor, multiple content managers, and a large staff of writers (more than 10) who often had professional experience in water- or environment-related fields and whose sole responsibilities were to write original pieces for the platform. In this second wave of hiring, the Portal assembled a team which combined staff with experience working in the water and development sector with staff who had experience working in media (e.g. print journalism, videography). In its staffing, the portal professionalized in multiple directions: in a

Image 5. A sample of 2011 pieces: the newly professionalized newsletter, an original piece written by new staff, and a re-circulated article featuring a prominent water activist.

development practitioner expertise on water (as opposed to, for instance, hydrology or civil engineering), in media and content production, and administration.

WaterWeb's move towards operating more like a traditional media institution in both its organization of staff and media production was underwritten largely by a small change outside of the organization and over which it had little control. In early 2011, Google changed its search algorithm to deprioritize content aggregators (or, the worst of these, what they called "content farms"), websites that simply aggregate and redistribute content generated by others, much as WaterWeb had been doing. It was an event that *all* managerial staff at the portal whom I interviewed, two past and four current (as of 2015), described as a pivotal redefining moment for the organization. Worried about staying afloat in Google's new search results, as the site had always come within the top results of searches related to water in India, the portal's staff decided to, with board approval, restructure the entire organizational staff and content production toward original writing. Though news and other media could still be recirculated, it too needed to be repackaged more overtly as summaries and roundups.

The Google update, popularly referred to as Panda, which prompted this drastic change in labor and content strategy produced over a 50% drop in WaterWeb's overall

Figure 2. Unique visitors to WaterWeb per month, September 2009 through June 2014.

traffic (from 54,841 monthly unique visitors in March 2011 to 26,767 two months later, see

Figure 2 above). At the time, this was the portal's most significant drop in end-users to date,

though one later other event – a two-day-long blackout which affected the site in April 2013

– produced more drastic effects; it resulted in a decline of the site's overall traffic, again, by

roughly 50%. But rather than recovering in six months, WaterWeb was still attempting to

regain its previous audience numbers one-and-a-half years later. While nearly all unique

visitors were one-time visitors (only between 1-5% of them ever returned to the site again)

and spent less than two minutes on the site, the number of unique visitors could gauge the

total number of end-users who were exposed to the portal and, similarly, the number of

future return visitors. As the portal shifted to a new strategy of content production, wherein a

team of writers would publish original stories and offer news and policy summaries,

WaterWeb steadily increased its site visitors.

Human Interests and Attempts to Expand the Audience

By the later years of the period under consideration, the portal moved to feature a

more diverse array of people, specialists and non-specialists alike, in their content. These

changes were borne out of a general interest in attracting a broader popular audience, which

the portal staff tried to secure by publishing brief stories of human interest that could be

widely accessible. Some shifts in writing specifically emerged after the staff participated in

formal training sessions which were designed to give them better formulas for attracting

popular audiences to read their stories and included not only workshops in writing engaging

journalistic pieces but also training in social media, photography, and videography. When,

for instance, writers were encouraged by two portal managers to help the portal grow on

social media using their personal accounts, employees requested to receive formal training in social media promotion. In another instance, a Content Team staff member whose background was in filmmaking was hired as an employee after she taught the team for a photography workshop, and she regularly mentored other writing staff when they made films for the portal by reviewing their videos and offering tips for editing. Regardless, workshops shaped portal content away from the stiff, serious, direct, sometimes heavy-handed development discourse of previous years even as many articles continued to tell those same stories and plot arcs (e.g. site visit summaries, project reports), while using vastly different rhetorical techniques which emphasize the perspectives and roles of individual people.

Despite the portal's increased concern with storytelling through a human-interest aesthetic, which in turn drove the staff toward centering on individuals and their personal vantage points, the portal's content was still somewhat skewed toward particular positions and discourses widely upheld within development. Take, for instance, some of the individuals who the portal selected to feature: development filmmakers[37], a recently deceased politician, an engineer – people who would be considered experts within the contemporary development industry. Too, in the many professional communications on the portal, individuals and publics without an affiliation to development organizations are rarely mentioned. This pattern becomes clearer when one examines what those specialists say, as almost all conform to discourses that emphasize the responsibility of the citizen to address water and development issues, rather than the government. (Save for the hagiography, which awkwardly highlights the recently deceased politician's destructive ideas about national

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[37] With the fixation on behavior change paradigms for development interventions, globally and nationally, filmmakers, whose craft is based on impacting the beliefs of audiences, have become a highly privileged form of expertise in development circles.

water policy with a reverence that can only be explained by the widespread public mourning that followed his death and not WaterWeb's general editorial policy, which has consistently decried those same positions). While a wide variety of experts are featured, their discourses, are quite similar. For instance, one water and sanitation engineer is featured through a personal interview and his poetry. His poems largely lament the wastage of water by citizens, and he uses poetry to, as he says, "appeal to the common man (who here is the consumer of water and sanitation services)," a conception of the citizen that reduces their societal role to, merely, that of a consumer. In another interview, a filmmaker, who works with water NGOs, both admires community members who he has documented and been exposed to through his films while simultaneously claiming that people, not governments, are responsible for solving water problems and that they need to change their normative behaviors and beliefs to fulfill this role, saying:

Image 6. A new writing style for the portal in 2013: original journalistic features written with a human-interest angle.

> I believe that everything lies in the hands of common people, governments do not matter. How do you motivate people to do something is by showing them stories or examples, which can encourage them to change their behavior? Films can thus have more impact by being able to show people actual experiences and demonstrations of how changes have happened.

By focusing on such new figures, the portal staff generated material that departs quite a bit from the media that characterizes previous years while still upholding voices within the development sector.

Original writing is important for the representation of non-specialists and their stories, I found. In my analysis of portal media samples, non-experts, when they are featured, are mentioned only in the original pieces written by portal staff, not in re-circulated pieces. But these representations are sometimes problematic. For instance, in a site visit summary, written in 2009 and which considers open defecation, the opinions of several villagers on their opinions about open defecation and the cost of toilets are quoted. However, they are nameless. One person is referred to as "an 'amma' (meaning mother in Tamil)" and, elsewhere, merely "a middle-aged woman." This is, however, a story written not by permanent portal staff, but an intern from an American university. In another article (written in 2013 and by a portal staff member) which generated extensive end-user commentary, the people featured, who harvest sweet water on a small island with no other fresh water sources, are exoticized as living in a mythological past while they are also described as having few historically founded rights to the area. This is encapsulated in the title of the article, "The story of Dhanushkodi, a cyclone hit town, where reality coexists with myths, mysteries and miracles," as well as various points in the article which allude to the significance of the island in Hinduism or to the author's framing of the town as strange or foreign (albeit beautiful). The residents of Dhanushkodi further go unnamed as they are depicted in the

article, though the author does refer to them generally as fisherfolk. The article prompted many comments made by portal end-users, which reveal extended curiosity and knowledge in the larger topic of harvesting sweet water in unknown areas. Inspiration pervades the tone of the exchanges, and such a lengthy comment thread was quite novel for this era of the portal. But even so, no one calls into question the nameless depictions of the people in the article. In other articles, one reads of local heroes who have championed a solution to a water issue, such as restoring a water tank (reservoir) or removing arsenic contamination from a well. These stories are not so much about everyday people as a personalized framing device utilized to deliver developmentalist messaging about what is desired for civic behavior, messaging which is dictated by the priorities of an elite development apparatus and which already had long been present in the portal's past material. This material shows that as the portal moved to centralize human-interest stories and the interests of a broad public, citizens and non-specialists, while made more visible in the portal's new publishing priorities, are often framed, tacitly and unintentionally, in patronizing ways.

There are exceptions, of course, and all are found within the original writing of the portal. A feature interview of a filmmaker nominated for several awards, who also happened to be a portal staff member, was conducted affectionately and personally. The author's introduction of the interview offers an example:
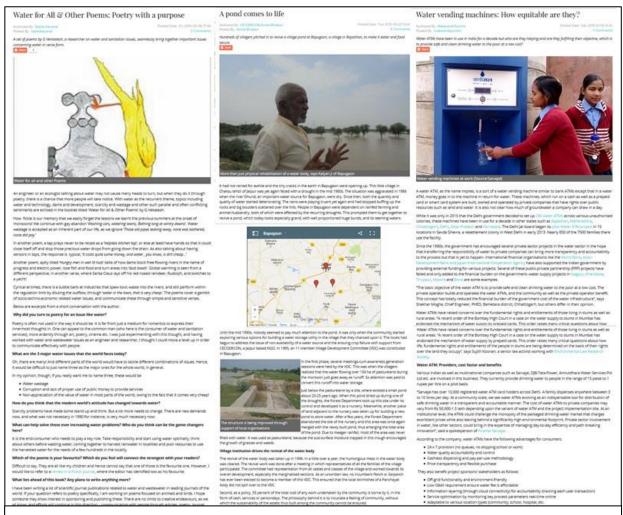
> The 8th CMS VATAVARAN Environment and Wildlife Film Festival and Forum received a total of 178 film entries from 27 countries in 8 varied categories. In the category 'Water for life', 2 of the 8 films finally nominated are those of our very own team member [name extracted]. A diverse and eclectic film maker, [name extracted], an accomplished artist, uses her camera to capture stories from across the country in an unhurried, almost poetic pace. With topics as varied as climate change and life along a *'beel'*, her films aim to transport the audience to places they want to see, and people they want to meet.

> We were thrilled to get an excuse to get her to share her thoughts on what makes her movies not just simple communication tools but stories about real people, real problems and possibly real solutions. Here, is what a ususally reticent [name extracted] has to say!

The author frames her filmmaker colleague not only by describing the prestige of the award she is nominated for, but also through language which suggests esteem, reflection, and affection. Similarly, and unlike other interviews in the sample, the author places favorite quotes and places of her colleague throughout the article. In comparison to other interviews published on the portal and in the sample, the filmmaker's perspectives are wide and various, a dynamic certainly assisted by the extended relationship between her and the interviewee, another staff member, who could draw from many life details beyond the immediate subject of the filmmaker's award nominations to formulate questions. At one point, the author asks her colleague about a co-director and "new collaboration." Unknown to most of the audience, this new collaboration is not only professional, as the filmmaker had recently married this particular co-director. The question plays upon, again, personal layers of the filmmaker's life which her colleague had access to and, similarly, produced quite a personal answer:

> [Name extracted] and I have worked together on a couple of videos. He has a great sensibility when it comes to handling sensitive subjects. Also, I think it is important to understand each other's strengths and the willingness to make up for the other's weaknesses as much as possible, and this comes naturally when we work together. While shooting in Rapar, [name extracted] had a tough time with the language. However, I understood quite a bit owing to my Sindhi origin. So while I would try to interpret interviews, he would go on with his camera to extreme difficult locations for extra shots. (Laughs) We are married now, but this partnership began even before that.

Another exception to the narrowing of development discourse despite the proliferation of

story formats are the few stories that offer a first-hand reports of a water-related disaster

(flooding in Chennai) or that focus on drawing out systemic inequalities within water

management. While these articles do not focus specifically on individuals or citizens, their

authors target topics and institutions for public critique and exposure that could impact the

rights and concerns of a larger public.

Image 7. Expanding even further into human interest stories, the portal began to cover artists, films, and the development success stories of individuals within a community. A small subset of original articles are critical and call attention to systemic inequalities or failings of the state.

Dwindling Citizen Participation

Citizen participation in WaterWeb started out with lively comments sections and posts from a broad range of audiences. However, it declined with each year of the portal's existence even despite a shift on content, which sought the audience of a broad public through representing a greater variety of interests, perspectives, and subjects.

In its earliest years, the portal saw a variety of people interacting with and leaving comments on the platform, though much of this activity develops in 2007 as 2005 is devoted to re-circulating Solution Exchange materials. Unlike the Solution Exchange documents, which seem to be a product of extended dialogue and synthesis (albeit a highly controlled and revised dialogue), dialogue in the form of comments seldom appear on WaterWeb during these years; however, when they do, they offer little detail, fast opinions, or they seek contact with or the promotion of a person, business, or project. The inquiries themselves, though they appear to have been submitted to the portal, were actually pooled by Solution Exchange with WaterWeb merely circulating its content. By 2007, a significant portion of WaterWeb's content was inquiries – and not just from experts, as Solution Exchange's reports were. These posts feature queries about a range of urgent topics, as the post titles suggest: "Worms in bottled water supply," "Need a low cost RWH [rainwater harvesting] system in hilly area," and "Minimum distance between sewage and drinking water lines." Each post, further, reveals responses from at least two people, always experts in a water-related field ("Retired Emeritus scientist," an official from the Central Water Commission, a senior environmental planner, a representative of "WES-Net India), but often more. During this period, the portal centralizes and privileges expert knowledge but does so in a way that brings it to interface with citizen query and dialogue.

As the frames offered for development become more sophisticated in 2009, the amount of active public participation begins to drastically decrease. Only seldom. do any media posts bear public commentary in these middle years. In fact, only one entry from 2009 had any comments; the article, discussed earlier, which summarized two peer-reviewed journal articles about a NASA satellite mission that reported astounding losses of groundwater across the South Asian subcontinent along with end-user commentary which questioned not only the findings of the NASA research but also WaterWeb's authority in evaluating (and later circulating) those findings. Aside from this exchange, none of the open inquiries of the past or the sometimes extended dialogue in the comment sections appeared in 2009's media sample.

In 2011, aside from citizen-journalist articles and entries by newly hired staff and interns, the voices of non-specialist citizens continued to decline from 2009. None of the media from the 2011 sample featured any comments from users, be they layperson in the world of water or expert (by affiliation, contributed knowledge, or self-proclamation). While the portal staff seemed to revive the Q&A section of year's past, which had diminished completely in the 2009 media sample, they specifically rebranded it as questions posed to those with expert knowledge or status by those without. Even though previous inquiries, over time, developed into non-specialist inquiries with only experts responding, the formalization of this aspect of the portal, which had at one time been a space of rather organic discussion and problem-solving, concretized the epistemic relationship of expert to non-expert, both as a power dynamic and right to knowledge. Experts, in this case, were designated by the portal, rather than the quality of response volunteered by those who might know enough to respond to a question. The Q&A section became more formalized in other respects as well: A glance

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at the questions submitted during this year suggest that the portal staff filtered questions that were later answered by experts, leaving many strands of inquiry outside of those featured in the newsletter to remain unanswered. The division between experts and non-experts also, at this time, became pronounced in the way the portal staff imagined and talked about the platform users, as I found throughout my ethnographic fieldwork with the portal in 2011 (especially) and 2014-15, with many staff referring to end-users as either "experts" or "laypeople" and conceptualizing the portal as a space where experts were to control any messaging received by a larger, non-specialist public. In the content of the pieces in the 2011 sample, non-specialists and members of a general public are referenced, in two pieces, as consumers (and nothing more) and, in another two pieces, as the numbers which comprise development statistics meant to index life and health improvement (recipients of toilets in one case and, in another, the bodies permanently damaged by contaminated water resources). Elsewhere, and even by writers who I came to personally know as acutely aware of tacit power dynamics, interpersonal and structural, and who I observed to vigorously advocate for social justice in their portal writing, non-specialist citizens made absolutely no appearance at all in the media samples analyzed, even for a piece calling for the necessity of understanding the socio-cultural dimensions of various water problems, a topic for which referencing individuals and a larger public would be wholly appropriate. In another article, a staff writer characterized an NGO, at one point, as an entity that took public representation, a fundamental responsibility of the state within a democratic society, much more seriously than the state; at another point, the NGO was treated as the public itself. The conflation of the NGO as the sole responsible democratic representation of the people and as the public itself is dangerous, because it, at once, obscures the already opaque political power granted to

NGOs and also naturalizes it. Continuing the trend of previous years, non-specialists and the general public continued to diminish as voices within the platform.

The presence of the citizen becomes harder to assess as the portal became more oriented toward being an online magazine about water as opposed to a digital repository with absolutely any kind of water-relevant content[38]. On one hand, the portal certainly took an interest in and actually depicted more individuals than in past years. Further, there are more comments than previous years, though very few overall, and they only appear in response to original articles. These comments are fundamentally different from comments of previous years, which were most often questions, solutions, critiques, or promotions of products or services. During one particularly intriguing comment chain of 10 comments, people, uncharacterized by affiliation (a marker of expertise or validation), offer extended thoughts and knowledge about the topic of the article, harvesting sweet water near the sea, and even start to build upon one another's questions and ideas on not a topic of need but common interest.

Yet other views of the portal outside of the random media sample – a survey of portal end-users and the ranking of most visited pages – give insight into citizen participation in its later years. Both of these, the end-user survey and list of most-visited pages, reveal a website where layperson activity is marginal to that of experts. Though the portal spent most of its budget supporting the original writing of its staff, which produced journalistic reporting from throughout India, human-interest stories, and original analyses of current events, hardly any

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[38] Of actual voices of non-specialist citizens on the platform in 2015, it is difficult to assess the comments sections, as many comments associated with articles from 2015 appear incorrectly linked to the wrong article. Out of the sample, 23% of articles, all originally written by the portal's staff, featured comments; however, of those comment threads, only one third appeared associated with the correct article. Within those comments, most users appeared to have not read the article, as they complimented the author for the opposite position than what he expressed in his piece.

of this media is among the most frequently accessed material on the site. Much more

accessed, from 2010, when the portal first began using Google Analytics, through 2014 were

questions and answers and datasets or data-related content (e.g. data stories, dataset

summaries), content formats which support and centralize expert knowledge. Furthermore,

with each year, there are fewer pages which indicate active end-user interaction with the site

(e.g. "/upload" or "/user/login"), and in the last year for which I have Google Analytics data

(all of 2014), there are no pages which suggest active end-user interaction in the top 50 most

accessed pages.

These patterns are also present in a user survey conducted in late 2014 (633 total

respondents, which varied by question). In the survey, nearly all WaterWeb users reported

themselves as male (78.8%, of the 359 respondents who answered the question), a ratio that

did not change regardless of the user's experience with the portal (from new users to people

who'd used the site many times) or professional affiliation. And while a slight majority,

58.8%, of total end-users (of 558 respondents) reported that they had no professional

affiliation or interest in water, an incoming portal manager (in 2015), even after having seen

the survey results, continued to conceptualize the portal as primarily catering to an audience

of development practitioners even as she hoped to cultivate a broad public audience. When I

met with her to discuss several early summaries of my research, she said, "We still feel that

the majority of the portal's users are from the [water] sector." The assumption of expertise

or non-profit affiliation potentially had important effects on the portal's audience, as those

users who had visited the portal many times were indeed more likely to be employed in a

public, corporate, or non-profit job focusing on water (55.4% of experienced/return users). In

other words, WaterWeb site was more legible to water professionals as a useful or enjoyable

resource – or, in other words, a website worth returning to – than it was for users without a professional connection to water (hobbyists, students, and others). Further, a large majority of the portal's users are highly educated with 76.3% (of 344 respondents) reporting that they had had some experience in an advanced degree program (Master's level or above). Though increasingly expert-centered discourse and publishing might cultivate an almost exclusively highly educated audience that shares the values and literacies of those creating content for the platform, it does not explain the heavy dominance of men in the site's audience, a dynamic I cannot fully account for at this time. In my research, from attending water sector conferences and events to visiting the sites of many NGO workspaces, women were thoroughly present save for high-level national and international policymaking, where, I observed, they often made up one quarter or less of the participants, a fact which I do not believe fully explains the gender ratios of WaterWeb audience. Neither the composition of WaterWeb staff nor Internet access statistics are as extremely gendered as the survey responses for the portal's audience, especially for those who are highly educated and English-literate. The gender imbalance among WaterWeb audiences suggested by the survey thus must be examined more carefully in future research. Together, these survey results suggest that WaterWeb, regardless of diminishing user commentary and inquiry, came to support a small, elite, and exclusive audience, hardly serving the broad public mandate it originally had been tasked with by the NKC.

The mostly elite publics who use the portal, however, find it useful for numerous purposes, and some professed to engage in acts of translation which could make WaterWeb information accessible to less elite groups. Among those who responded to the end-user survey, for instance, most people reported to find WaterWeb helpful. When asked to describe

how they used the information they found on WaterWeb and how portal information had

proven helpful to them, most of those who chose to elaborate discussed utilizing WaterWeb

media in research papers, reports, and teaching, such as these responses:

> **How have you used [WaterWeb] information in the past? (182 responses)**
> "Share it my students and motivate them to read this site."
> "for my Ph.D. research work"
> "In my academic work"
> "Mainly to update my knowledge, use some of it while teaching
> coastal management, EIA etc"
> "as references for my dissertation research report."
> "For my Bachelor Thesis"
> "for research paper only."
> "yes for my research paper"
> "Once for my undergrad btech project."
> "It was helpful to me for preparing a report on Rajasthan, Karnataka,
> Maharashtra, W.Bangal, Jharkhand, Madhya Pradesh, Punjab,
> Hariyana and Gujarat"
> "i got a lot of material for my presentations"
> "usually for research for work - i write about rivers."
> "yes. In my papers and book on Tista, Trams-boundary River Studies
> in Brahmaputra , Ganga basins."
> "Used for research work For better understanding of issue References
> for Writing report"
> "I have a blog and written 4 articles on ground
> water,drilling,contamination of ground water etc. and i used the reports
> of CGWB,AP State GWD read from [WaterWeb]"

In most cases, WaterWeb survey respondents were using the portal to help them research,

write, and teach. These are unfortunately opaque categories: the social life of a research

paper or report, much like the impacts of national commissions, vary widely and are not

immediately evident. Some reports or knowledge passed on in educational settings are

destined to sit, forgotten, on a shelf, in a digital file, or in one's past while others are more

impactful. At the very least, the end-user responses show that WaterWeb information was

being used in processes of research and teaching (within mostly NGO and academic settings)

and for the fulfillment of university degrees and professional duties. Some end-users came to

the site simply to improve their own or others' awareness about water (e.g. "Reading articles, news, case studies. Essentially learning and information;" "To expand my knowledge base and share with my students studying environment;" and "I am in any case a friend of the earth in everyday life. My personal use of water is 85 litres a day. So, I use information here for knowledge mostly"). More rarely, respondents mentioned that WaterWeb information helped them in their activism or in helping create conditions of water access for those who were poor and did not have it, such as the following response, "To understand the situation and to develop perspective, concept and strategy for improving water access to the poorest." These responses reveal that WaterWeb contributes to the professional, educational, leisure, and, more seldom, the political and commercial (e.g. "in convincing my customer on new technology") pursuits of its end-users, but it is unclear what benefits these pursuits confer in the world and for whom.

Occasionally survey responses articulate what kind of information WaterWeb reliably makes available. One end-user did not say how s/he/they specifically have used portal information but that "It is an excellent place to see on-the-ground ideas for water supply and sanitation. Both technology/methodology-wise and user perceptions." Another said, "For me, it's more general awareness as I am not a water specialist, but I share some of [WaterWeb] information with our NGO water specialists. It just generally helps me keep aware of what's going on in watsan." Others said that they used WaterWeb for learning about important issues, such as "Comparison of Water Problems especially Punjab" and "to know the arsenic contamination." While some of these responses identify the relevance of the WaterWeb to significant topics or queries, such as identifying the in/appropriate levels of arsenic contamination in water, much of the responses affirm WaterWeb to be used most often

within NGO and educational contexts. "Watsan," for instance, is a shop term popular within development circles which abbreviates the phrase "Water and Sanitation," a subfield of development. Similarly, several end-users who describe the contexts in which they have applied WaterWeb information depict working within development projects, such as one end-user who "Used [WaterWeb information] for improving the design of water governance project that we were implementing in India" and another who said, "i have visited the portal for fluoride issues as i am working on a project related to excess fluoride in water, how to process the defluoridation of water." These survey responses situate the information of WaterWeb as distinctly useful for professionalized development – it is used more so to implement "projects," to train people (e.g. "i got information about some ground water training details through this site and i downloaded some data's related groundwater"), or to hear "on-the-ground" perspectives than to assist, for instance, a group self-organizing to enact change for themselves.

Though moments of translation outside of the development industry and educational institutions are evident. Two survey respondents identified themselves as freelance journalists writing in Tamil and said that they frequently either translated or sourced material from WaterWeb. Elsewhere, end-users gave accounts of times when they had presented or shared WaterWeb information in the[ir] village setting. "[W]e share the infomation to villagers," said one end-user. Another gave a full spectrum of settings in which they had shared WaterWeb information, saying that they had used the portal "For presentation in seminars national and international For discussion with school kids in my village To encourage students in my village schools to develop water use and conservation models including RWH for demo in science exhibitions and school Open Days to visitors."

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Education was brought up by end-users in the survey as the most common site where WaterWeb information is translated to audiences outside of the highly educated people who access the portal. Though one end-user applauded WaterWeb for some aspects of its niche reportage, saying "[I] used [WaterWeb] to write views which I think need to be put in public domain, but seldom are." In such cases, WaterWeb was found to report on topics and perspectives that were important but lacking in mainstream press. A couple of rare comments also suggested potentially important destinies for WaterWeb information. One end-user said that WaterWeb information had been "helpful in providing the motivation to Our CBO [community-based organization] in advocating for their rights related to water and sanitation" (though *whose* rights were advocated by the development organization or to which authority is unclear). Similarly, one survey respondent professed using WaterWeb for "Preparing the master plan for the District and State," a significant government planning exercise. These acts of translation and influence, however, are difficult to assess. How were organizations using WaterWeb information to fight for water rights (and whose)? How – and to what extent – was WaterWeb information reshaping government policy? Regardless of the answers to these questions, the end-user survey suggests that WaterWeb had become much more a tool for elites with managerial or discursive power than for all citizens throughout society.

Behind the Screen: The Staff and Work of WaterWeb

Thought Leaders for Evolving Senses of Digital Citizenship

WaterWeb's online portal grew steadily as time progressed, as the media analysis shows. It amassed more and more content and actively pursued new media forms and genres.

The growth of the portal went through a few eras of expansion, most which took the portal in a distinctly new direction from its previous trajectories: At first (2005-2006), it was circulating such little and homogenously sourced content that it was operating merely in name only. In its first years of active circulation (2007-2010), the portal expanded to include original question-answer exchanges, regular news and policy updates, blogs, and a variety of NGO-sourced materials. Next it entered what was often referred to as its "repository" phase (2011-2014) during which it began to publish wide variety of media forms: photographs, videos, datasets, data calculators and applications, and original feature stories. During this time, it also experimented in organizing or participating in novel events. And in 2014-2015, the management was again considering serious revisions to the web design and content strategy of WaterWeb, guided by concerns to meet the needs of urban audiences, grow the portal audience, and "integrate" the portal with the philanthropic organization that hosted it. Despite its experimentation across genres and philosophies over time, the portal prioritized the perspectives and media forms of NGOs, who both circulated content via the portal and were frequently the subject of the portal's original writing. But these shifts in portal content required significant human labors and tracked according to WaterWeb's ever-evolving staff roster. Indeed, when one takes into account the changes in staffing and labor at WaterWeb, it becomes clear that WaterWeb's content has always been a direct product of those who work on it. These shifts over WaterWeb's first ten years must be considered not only as media events but also in light of the philosophies and labors which produced them.

The portal was publicly launched in 2007 by then-Prime Minister Manmohan Singh at a highly ritualized affair on the campus of a famed Indian tech company. At that time, it was being overseen by its first director (hired just two months before) who dispensed, over

the first months of the portal's existence, content that had been collected over the course of 2006. This one-person operation was miniscule in comparison to the multiple WaterWeb teams I encountered in 2014, which included an administrative and managerial group based in Bangalore (including a new director appointed in 2013, an IT specialist, an editor, and another staff member whose responsibilities had shifted over the years between organizing portal volunteers and managing the portal), a team of ten writers and content-aggregators who worked from home across the country, a group of staff based in Delhi who oversaw the Hindi version of WaterWeb, and another, also in Bangalore, who were re-launching a new version of the Kannada portal which had become nonoperational years before. In between these junctures, WaterWeb's various managers had hired people to promote the portal publicly, generate or source its content, manage the technical aspects of the site, and establish a "Data Project" (which was ended after two years, in 2013). It had expanded to launch two additional "regional language" portals in Hindi and Kannada as well as a portal for schools, and, just a couple of months into my ethnographic research, two "portlets" on sanitation, one in English and one in Hindi. With these expansions, WaterWeb's staff went from one (2007, a director) to four (2008, an IT specialist, a person to promote the portal, and another to build its content) to seven (2009, with the launch of the Hindi portal) to eleven (2011, to start the Data Project, to organize the portal's volunteers, and two writers to contribute original content) to about twenty-five employees in 2014-2015.

These expansions were enabled by a stream of funding of at least 1.2 crore Rupees (150,000-250,000 U.S. Dollars, depending on exchange rates between 2010 and 2015) which was essentially guaranteed from year to year. Because of this steady endowment, WaterWeb was unlike many non-profit development programs in that it did not ever face the problem of

where or how to get funding but only how to allocate it well. While WaterWeb staff (mostly its managers) were granted many freedoms, as we shall see below, they were not completely free to use their annual budget as they pleased. Major changes and experiments of the portal first had to be approved by a CEO and board of directors who met quarterly to review the portal. At these moments, it fell to the portal's directors, and sometimes its managers, to defend or pursue new programs, staffing, or budgetary expenditures for WaterWeb.

For its early directors and managers, the portal valued experience in high technology (i.e. IT): WaterWeb's first director was a graduate of an IIT and worked in a series of tech start-up companies before joining the portal. The second director worked as a sales manager at a prominent tech company based in Bangalore. And another manager, who deeply influenced the trajectory of the site, was similarly a graduate of an IIT whose professional background, before joining the portal, was an IT professional. These individuals were granted wide freedoms and many resources to build the portal according to their visions. Indeed, as staff of various specializations were added to the portal, always according to a strategy determined by the portal's directors, managers, and board of directors, the website – and its sister portals – changed shape and direction, but none more than when a new director was named. The tenure of the portal's second director, whom I will call Krishna here, shows how extensively the portal's directors and managers could influence the portal, its strategies, and staffing.

Under Krishna's leadership, 2010-2013, WaterWeb became a veritable zone of experimentation in new media forms, genres, venues of visibility, and models for portal labor. In subsequent years, portal staff would often refer to this phase of the portal as its "repository" phase due to its widely varied mandate for publishing. In those retrospective

discussions, the repository concept seemed to imply a generic accumulation of media or filling out of the portal, an online space which was meant to go well beyond a mere website in its comprehensive offerings of various media forms. But for Krishna, the repository idea was linked to a much more extended philosophy that reserved a special place for information communication technologies, which could, if popular enough, act as a massive reserve of testimony, data, evidence, and thoughts. This reserve, made possible by the Internet, could be searched, analyzed, and used for revolutionary acts of creation and invention, as Krishna described to me shortly after I arrived in Bangalore to intern for WaterWeb in 2011. Our conversation served to orient me to the portal as I was planning, under Krishna's supervision, a project that would be mutually beneficial for the portal and my academic interests. In a wide-ranging conversation, Krishna had described present-day society as a veritable mess; due to such processes and events as globalization, breaking down the caste system, drama of national elections, and other major changes, he described society as filled with dissidence and as "being cut wide open." It was in this mess that Krishna placed the work of the portal, saying "out of the mess that we have created, something will happen. Everyone is trying their own social project. … I think our generation is not ready to give solutions – what we *can* contribute is getting people engaged in this issue. … The solution to water crisis is not going to come from the West, it is going to come from India. … Meet a lot of people, talk to people about their material realities, what they are doing about it, ALL different people, put this on the website, [on] YouTube." The plan we came up with that day for my internship project was a series of interviews and rough, short documentaries about water conflicts across India in which I would, as he said above, meet as many different people and document as many different perspectives as I could and upload their testimonies about water. Such an archive

could self-servingly spread awareness of WaterWeb's existence among those featured in its media, but it also, in Krishna's vision of the portal as a repository, could be like an informational capsule available for posterity which could produce, if searched and analyzed by a diverse and proactive public, answers and solutions to systemic and complex national and global problems. In this philosophy, the Internet made public not only information usually only accessed by highly powerful institutions (e.g. the state) but it also disseminated that information in media forms and genres which many more people could understand (e.g. short videos). Digital knowledge portals, for Krishna, were the structures that could curate, grow, and safeguard this public record.

It was not uncommon for Krishna to intensively guide volunteers in devising singular projects that applied the volunteer's preexisting skills and interests toward fulfilling or further exploring his own visions for the portal. He did the same with another highly qualified volunteer who came shortly before my 2011 project concluded, and with several years of experience working professionally in international development. The result of their conversation was a report on "Digital Natives," which compiled interviews with Internet and CSR "experts," discussions with WaterWeb staff (many who were ex-technologists) and attendees at development tech and media events, and references to a handful of websites and articles as secondary sources. The report importantly shows the large influence a director could have on the portal's published content, philosophy, and staffing, but it also, as a window into the portal's operations during this period of leadership, reveals the extent to which the resources of its endowment, volunteer labor, and the visions of its manager transformed WaterWeb into a zone of experimentation which had consequences for the way public audiences were imagined and pursued.

The Digital Natives report, submitted in early 2012 and co-authored by a volunteer and Krishna, follows a structure that reflects WaterWeb's institutional location as an enterprise that is granted much material support and independence but which follows the suggestions of its founder and must regularly answer to – and pitch its new activities to – a host organization and board of directors. The report commences with a short statement from the philanthropist who founded (and still funds) the portal, which states the space of inquiry that the report was apparently set to answer. The statement poses several questions which ask about how new technologies and media are altering citizenship and democracy in India, if they can indeed help solve development challenges, and what opportunities this space presents for WaterWeb and the philanthropic organization which funds it. This statement sets WaterWeb as an organization with governmental intentions in the sense that it can contribute to altering popular conceptions of citizenship and also development outcomes. The main body of the report then explains the concept and demographic of digital natives and discusses their social and political influences. Finally, the report concludes with a pitch to WaterWeb's host organization, suggesting "models of engagement" and action steps which align with the trust's core strengths and philosophies. The report thus sought to achieve a wide range of experimentation and some funding for WaterWeb, but it did so, importantly, within particular institutional, financial, and philosophical confines.

The description of digital natives offered by the report emphasizes the innovation, political engagement, and systemic influence of a youth familiar with digital technologies. It reads, "'Digital Natives' are described by their comfort with using technology to create, work, socialize, play, express their identities, and participate in public and social life. Digital Natives comprise a small elite section of the world's population, and an even smaller

percentage of the population of emerging economies. Typically under the age of 30 and raised in the digital age, digital natives create content, promote causes and interests, and build new forms of social, cultural and political relationships that are reshaping what it means to exist and participate in the public sphere."

While the report attempts to achieve a balanced tone, by introducing the digital native concept through the lenses of its "pessimists" and "optimists," it is clear that the authors of the report incline toward an optimistic view. One paragraph is devoted to explain each perspective, digital [native] pessimistic and optimistic, but nearly the whole document could be taken as evidence of an optimist's perspective. Examples abound: The report is sprinkled with references to studies that suggest digital spaces to be more egalitarian than their offline counterparts or to be the sites of political and social innovation. One of these references is particularly telling, as it is an opaque summary of Ethan Zuckerman's "Cute Cat" theory (Zuckerman 2008). Zuckerman's theory posits two tests to the functionality of digital social media – pornography, which is the most basic use of social media and tests if the platform functions at all (because if the platform functions at all, it will be used to share pornography), and use by activists, which is the highest purpose which social media platforms can serve. Zuckerman's theory goes beyond these two tests of a social media system to say that most people are not activists and will not use a platform for activism but, rather, for self-gratifying, mundane ends, like sharing pictures of cute cats. But a platform which enables people to pursue such mundane but self-gratifying activities is very hard to censor. Indeed, censoring a platform that is mostly used for sharing photos of cute cats will turn people into dissidents and activists. While the Digital Native report does not outline these, or any, components of Zuckerman's theory, it also does not contradict them either: In a section which warrants its

own heading, "Cute Cat Theory," the report describes how young people who use digital platforms to create a "huge amount of content on platforms such as Wikipedia and YouTube" and, in doing so, to "publish, create cultural products, mobilize local resources, promote community-based causes and build new forms of socio-cultural relationships." The verbs the report uses to describe the activities and accomplishments of digital natives include "consume," "participate," "transform," "learn," "share," and "collaborate," verbs which are suggested to encompass the systemic changes digital natives bring about through their online activities. This brief discussion is then concluded with a reference to Zuckerman (and, for greater credibility, his affiliation with Harvard University) and a summary of his "Cute Cat" theory with a statement that surmises the most effective and impactful digital platforms are those "the youth are most comfortable using" and "the tools used for political activism are very much the same ones used for play." These descriptions do not directly contradict Zuckerman's "Cute Cat" theory, but they stretch its meanings. The report draws parity between play (or irreverence) and substantive political activism and is otherwise so vague in its use of the "Cute Cat" theory that the authors' invocation of Zuckerman seems to be used more to promote a wide space of general possibilities for WaterWeb than to build suggestions for the portal on the basis of Zuckerman's observations. The authors of the report, for instance emphasize catering to software or features enjoyed and used by youth rather than, as others might infer from Zuckerman's theory, that activist use of WaterWeb might be an important measure of success or that facilitating the sharing of mundane and self-gratifying content would make the portal resistant to censorship from the government. Throughout the report, the digital native concept is often exchanged, without explanation, with "digital citizens," suggesting that digital "nativity" is a preferred model for citizenship

for those at WaterWeb, that the online activities of "digital natives" constitute acts of

meaningful citizen participation, and that WaterWeb should be a key player within these new

expressions of citizenship.

The optimism surrounding the digital native concept threads throughout the report,

but often at the expense of the accuracy of the report's claims. For instance, the report briefly

addresses, but then elides, the elite nature of the digital native movement by drawing parity

between "Western-influenced, urban, middle class" people and "lower classes" who, he

report says, are "equally affected" by issues like "transportation, gender, voting, etc." The

report further suggests that the "Western-influenced, urban, middle class" is simply "more

active" than lower classes on these issues even if they are affected similarly. Elsewhere, the

report contests claims by some that digital natives are elitist by furnishing examples of digital

and media projects which claim to offer benefits for the poor or lower classes. These

assertions of the report, a document which was meant to guide the activities and philosophies

of WaterWeb well into the future, reflect the expansive optimism of the report's authors, and

possibly many others in the portal's staff, surrounding the digital natives concept and the

Internet as a vehicle for social and political change. But this optimism is often problematic,

for it leads the authors to present claims that distort the structural hardships and violence

experienced by lower classes as well as a historical record which reflects sustained and

effective political mobilization by the poor. For instance, just because development programs

are designed to benefit the poor or marginalized does not mean that they actually do (see

Schuller 2016), and even if they do result in improvements for their intended beneficiaries,

does not mean that they do not generate or replicate other forms of violence or inequality

(Baviskar 2004; Reisner 1986). Further, the interests and geographies of elites and middle

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class are often highly privileged in city and policy planning exercises (Heitzman 2004; Nair 2005; Dasgupta 2015), as I discuss in further detail in Chapter 4. The middle and lower classes also vary widely in their modes of electoral and political participation; to draw equivalences between them – and, even worse, to suggest that middle classes are *more* politically active than lower classes – might reflect assumptions of WaterWeb or the authors of the report but not the findings of scholarship or the realities experienced by most people.

Despite these false equivalences, systemic change is one consistent high point of the digital natives concept within the report. Systemic or lasting political change is mentioned throughout the report as a consistent feature, or consequence, of digital native cultural activity, and, in part, it is this capacity of digital natives to invoke systemic change which makes the concept so attractive to the authors of the report. The report reads, for instance, "The ability to publish, create cultural products, mobilize local resources, promote community-based causes, and build new forms of socio-cultural relationships has led to a systemic change. The huge amount of content created by young people on platforms such as Wikipedia and YouTube shows the power of digital natives to learn, share and collaborate in innovative ways." Elsewhere, in reference to literature that has discussed digital technologies as enhancing democratic spaces and practices, the report says,

> There is growing recognition that the participation and energy of India's digital citizens, mostly comprised of the young, educated, urban middle-class, can bring in fresh ideas and new momentum to addressing problems of development.
> The idea that technology has created a new form of civil society is one that has been discussed in the context of countries such as the United States since the mid 1990s. At that time [of the literature cited] it was believed that new technological tools were changing civic engagement opening up possibilities for greater participation, involvement and change. Digital Citizens were believed to be at the helm of a big change in public and political discourse because of the changed nature of their engagement, on websites, mailing lists and news groups. It was as an alternative, more democratic space for real

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public discussion and interaction and there was much theorizing about whether digital citizens share inherent political values citizens such as openness, rationalism and a belief in the freedom of speech (Katz 1997).

The report goes on to explain that such discussions have dwindled in the U.S. given that digital technologies have permeated society but then follows with reference to a movement in India that realizes enhanced democratic participation through digital technologies. This section of the report, framed by positive examples of digital activism and technological pursuits of democratic participation in India, affirms the message that digital technologies enhance democracy and bring about democratic values among end-users. The frequent references to systemic or large-scale political and social change create a tone in the report that suggests that WaterWeb, too, can invoke similarly monumental cultural and political shifts through creative uses of digital technologies and by tapping into the subculture of digital natives. However, despite the prevalence of systemic change in the report and the positivity it connotes, exactly *what* systemic political and social changes WaterWeb could bring about are left unspecified. Merely the promise of drastic change, not its direction or substance, is enough.

It is important to note that "digital natives" were, to WaterWeb – or at least to the report's authors, the working notion of India's youth *generally*. This is only slightly apparent within most of the report, which slides between the seemingly fused concepts of "digital natives" and "digital citizens," but it becomes clear in the last paragraph of the document where the authors articulate the stakes of pursuing digital natives as audiences and beneficiaries. The authors of the report ask, "Can [host organization name]'s vision … be achieved without changing the attitudes, values and beliefs of the middle class or the young?" Not "online audiences," "digital activists," or "digital natives," but the "middle

class" and "the young" denote the broader category of people WaterWeb held in its view as it reflected upon and learned about digital natives." During my ethnographic research of 2014-15, the conceptual lineage and intentions of the digital natives concept was fleshed out more explicitly when the "Digital Natives" presentation and report came up. Described to me by WaterWeb staff as an "internal learning document," the report was a past iteration of the portal's outreach strategy for youth in India, broadly speaking. Indeed, ever-present for WaterWeb's staff over the years was the question of how to expand the portal's audience; at this juncture in WaterWeb's history, "digital natives" were envisioned as a potentially important next or future audience which the portal could attend to and design itself in anticipation of. How "youth," of whom only a small percentage had access to Internet at the time in India (roughly 5%), became narrowed to "digital natives" went unexplained in both the report and my ethnographic research, as did the extent to which that large category, youth, was imagined according to other principles or models. The elision of youth as a broad category into the extremely elite and narrow concept of "digital natives" (and, then, even into "the middle class") is, on one hand, an exclusive maneuver which, in some ways, confined WaterWeb's development imaginary to a very small and comparatively privileged set of people. But it also, on the other hand, functioned rhetorically to open possibilities that might grant WaterWeb exemption from regulatory frameworks and other expectations within host organization and would first expand and then normalize new sites of potential work and experimentation.

The authors' tone of optimism throughout the piece not only advances digital technologies as important vehicles of systemic political change and digital natives as the youthful agents responsible for that change, but it also is a pitch to those who could grant

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WaterWeb more funding which, if successful, could achieve a great amount of creative and experimental space for WaterWeb, an organization which normally had to requisitely submit itself to the evaluations and approvals of higher, more conservative authorities. In the suggestions proposed by the document's authors for WaterWeb and its host organization, the authors make a pitch for a WaterWeb that goes far beyond a web portal whose primary activities are online and within the confines of one domain name. The authors affirm that the most successful projects which target the digital natives demographic are those which sensitize them to important issues and which "create conditions where the disadvantaged become digital citizens." Though the authors set a novel path for WaterWeb to contribute to these ideals, if WaterWeb is even to contribute to them at all. The three areas of action for the portal which the report authors propose are as follows: (1) to (further) develop a "skilled volunteer" program (such as the arrangement which led to the writing of the "Digital Natives" report), (2) to promote or facilitate citizen science (this was the avenue which I saw least developed in my subsequent exposures to WaterWeb), and (3) to organize or contribute to live events and campaigns. These models, suggested in the wake of a laudatory, eight-page discussion on the digital natives concept, are fascinating for the way they actually liberate the portal from primarily working with end-users online, or, indeed, digital natives. At the same time, these "ways to action," as they are referred to in the report are open-ended and create a significant amount of creative and experimental space for WaterWeb to pursue its activities, whether they be the main work of the portal or spin-off projects. It is not only the open-ended nature of these three proposals which posed to formalize WaterWeb as a zone of experimentation, but also the report's insistence on novel, or, at times, a full reprieve from evaluation exercises. The report, for instance, suggests that some efforts in the digital native-

citizenship space should be expected to have a 100% failure rate (in the short-term, authors assure) given that only experimentation and random successes will reveal the way to best practices in this new realm of digital changemaking. The report emphasizes the importance of play and of investing in "innovation lab[s]" or "knowledge hubs" without the expectation of money or return on investment. The document further suggests that WaterWeb be evaluated more as a "cultural, arts, [or] media product" than according to the standard metrics practiced in development organizations, like "output and outcomes." Indeed, the report suggests that WaterWeb has historically been much more than a semi-independent web portal within its host organization but that it has been a "sensor to the digital natives world" for their board of directors and funders and could continue to do so in the future. In this way, the report's authors position WaterWeb as more of a ICT4D-like and creative media thinktank within its host and funding organization. (Though WaterWeb often steps aside the label of ICT4D, both in the report and elsewhere.) Indeed, the report suggests that WaterWeb, and WaterWeb alone, is the broker to digital natives for its host organization. Finally, the report concludes by suggesting that while other avenues of investment might be more lucrative in the eyes of their funders, "this [digital natives] space" is too valuable to neglect and would likely lead to WaterWeb's – and likely, by default, its host organization's – emergence as "opinion/thought leaders in this space." In the report's proposals, the authors' utilization of the digital natives concept functions not only to secure WaterWeb as a creative zone of experimentation but also to achieve exemption from much of the administrative, evaluative, and regulatory practices common to within similar development organizations.

While the Digital Natives report is not a total summary of the activities and philosophies that sculpted WaterWeb in 2013 or afterward, it reveals much about the portal.

It reveals an organizational philosophy defined by creativity, experimentation, originality, and optimism. It reveals an organization that sees itself as a "thought leader" and outlier in a larger population of development and media organizations. The report reveals the kinds of resources, activities, and thought exercises WaterWeb permits itself as it pursues a mandate for public good. It also reveals an organization beholden to the approval of a board of directors and funding decision processes.

Digital natives were not the only sites for experimentation under Krishna's tenure. Krishna also actively led the portal into sponsoring and participating in novel events, such as filmmaking and coding contests, a multi-state sanitation march and campaign, and film festivals. One experiment which made a lasting mark on the portal was what WaterWeb staff called the "Data Project," for which staff compiled, published, and made searchable large datasets related to water. Though the Data Project only lasted for two years, the impact of the project on the portal's online interface and labor structure continued well into the future. (And similar to the "Digital Natives report, it originated with three months of scouting work by a WaterWeb volunteer.) While the portal published only a few hundred datasets, compared to tens of thousands of articles, the Data Project created a permanent new growth of the website that was, and always would be, quite different from the rest of the site. Within the Data section of the portal, content came in different formats: values organized categorically in a grid or an abstract visualization rather than written articles or question-answer exchanges. It also integrated interactive applications into the website to analyze and visualize datasets. These influences expanded to the textual transmissions of WaterWeb too, for the portal's volunteers and later its paid staff were encouraged to write "data stories" which would make WaterWeb's newly published datasets palatable to a broader audience

who did not possess the skills or interest to explore the datasets on their own. Data stories continued to be mentioned in content planning meetings during this ethnographic research of 2014-15 even though the project had ended. The Data Project seemed fanciful to the board of directors, but it cost just a small fraction of other programs – 10 lakh Rupees (roughly 1700 US Dollars) per year.

The inspiration for the project, according to Krishna, came from following the then-current endeavors of an Internet luminary:

> The Data Project started, because I thought it could be big. … I came across an article where Tim Berners-Lee – I don't know whether you know, but he was the person who created html and all of those things – so he was heading open data for the UK government. And then I realized that for someone who has seen the birth of— almost held the growth, the start of the Internet, if he's thinking, if he's working today on data, that means that probably today he's thinking it's going to be the next big thing. Then I worked on this thing [the Data Project] and begged and borrowed and got some budget for it for a year.

Krishna's pleading with the WaterWeb board to fund the project generated enough resources to hire a full-time manager for the project, who I will call Amna here, who oversaw the labor of numerous volunteers as they scraped publicly available datasets from other websites and trimmed and formatted those findings. Others were roped in as well: During my own internship project in 2011, which required interviewing and making connections with a number of non-profit organizations, Krishna encouraged me to also ask my contacts for any large datasets they had access to and would be willing to share with the portal.

But soon after the Data Project started, the central government created an open data policy and started a data portal of its own, so those at WaterWeb shifted roles to request particular datasets be published through the government-run portal. As Amna, the person who managed the Data Project, said to me during an interview,

> [The government] team decided to run [the government-run portal] demand-based, and since we were working with the open data population anyway, we found them and they found us, and they were like, 'What kind of data do you want?' And I was like, 'I want all of the water data. I want sanitation, I want piped water supply, I want CGWB [Central Groundwater Board], I want everything.' So we started to push through that capacity through the government, because they were internally lobbying Ministries to make data available on the portal, on data.gov.in so that people would use their portal and they would have the numbers. So it was a very good relationship that developed out of convenience.

Once WaterWeb had begun to form a relationship with the government representatives who were building the state-run data portal, WaterWeb also, as Amna described, shifted to creating visualizations and analysis tools that they supplied to the government-run portal in hopes that it would help advocate for new data releases.

For Amna, who continued to work on open data in development and governance contexts after she left WaterWeb (and after the Data Project was ended in 2013), open data-sharing was a key component to development progress. Open data, on one hand, could bring pressure to government agencies to improve their data collection standards and thus the larger usability of government data and, on the other, was necessary for going beyond local, population- or region-specific development solutions:

> [To scale an idea,] you need data. Because a local solution at the end of the day is ten villages? 20 villages? Maybe a gram panchayat? Maybe two? The government is going to be like, 'Fuck off, we have 10,000 villages to worry about.' What are you going to give them? We have all of this anecdotal stuff, we have these children we can march in front of you, and we can show you how well-watered they are. You have to give them something. You have to give them data. You have to give them solid, well-structured data. You have to put it up against their data, you need to give them information, you need to also look at where the shortfalls are, what to scale, what not to scale.

Before the Data Project ended, Amna had also begun case study collaborations with two organizations, one located in the Western Ghats in South India and another in The Himalayan foothills. These projects were meant to help cater data projects, both at WaterWeb and from

the central government, to the needs of organizations and citizens' groups acting within local development contexts. But the position of the WaterWeb board of directors did not change, and the Data Project, along with its activities and collaborations, were discontinued just two years after it had begun and in timing with leadership changes elsewhere in WaterWeb and its host organization.

As references to staff such as Amna and volunteers (myself included) suggest, Krishna did not just execute his vision of a vast, searchable repository of digital media which could be held for posterity by himself or through the pet projects of volunteers and staff. A crucial component to Krishna's leadership was also his rapport with Dev, who was hired at the portal just a year before Krishna's ascent to portal director but who soon came to oversee a large staff of writers for the portal from his home in northwestern India. Krishna described how the portal was somewhat shaped by his dynamic with Dev, saying "There was a certain way in which Dev and I worked very well [together]. Dev was a very process-driven guy, nuts-and-bolts person, whereas I would like to believe that I had a certain idea of where the portal should go." Together in tandem, Krishna and Dev both set much of the vision for the portal and established the finer day-to-day processes and labors that would uphold it. While Krishna was experimenting with new projects and philosophies, such as creating a repository of open data and exploring the "digital natives" concept, Dev established daily news and policy monitoring for the site. This labor was carried out by new staff members who were trained by Dev to continuously monitor, evaluate, and summarize evolving water-related legislation and news from hundreds of sources. These labors would ensure that no matter the irregularities which pulsed the other publishing endeavors at the portal (such as the Data Project, which last published a new dataset in 2012), the site would always be up-to-date

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with new material. News and policy summaries lent a consistency to the portal (and its newsletters) that obscured changing labor structures and managerial visions which followed this era of WaterWeb.

Then an event transpired which took the portal down a distinctly different path than its staff had been envisioning for WaterWeb, and Krishna and Dev's response to it would significantly restructure the portal, and its unified assembly of staff labor and content production, for years to come: The Panda update. As those at the portal saw it, this change posed a potentially catastrophic outcome, for when I first encountered WaterWeb in late 2010, Google ranked it among the first entries even in the broadest of searches, like "water in India." Krishna and Dev thus devised a solution marked by a degree of optimism and experimentation similar to that shown in the portal's other projects: They would cultivate a team of writers who could report on water from all across India. This all-India reportage, like the news and policy monitoring established by Dev, was one of the only moves WaterWeb made to live up to its mandate of providing a distinctly national public service, as originally proposed by the National Knowledge Commission. Over time this model for the portal was realized through several new staff, additional to the existing team, and the portal commenced a new life as a professionalized publisher of original reporting, all about water. This drastic shift, even though it nearly completely overhauled the content production model for WaterWeb, largely solved the problem posed by Google's Panda update. Today, though WaterWeb is ranked a bit further down than it was before, it is still ranked quite high: no longer on the first page for broad searches related to water in India but usually on the second or third. And, as Figure 7 shows, WaterWeb quickly regained and then surmounted the number of monthly unique users who accessed the site.

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Under the leadership of Krishna, Dev, and the staff and volunteers they had selected to work on the portal, WaterWeb expanded substantially in its online publishing, in the number of staff it employed, and in its offline endeavors. While this era was marked by optimism, enthusiasm, experimentation, and risk-taking, it also set a course for the portal to become a rather exclusive online space. This was not, however, intended by Krishna or other portal staff – Krishna repeatedly articulated the portal as a space that should be open to all. In a description of WaterWeb written by Krishna, he took care to emphasize the portal as a space that was not exclusive to experts and was open to all (italics designate my added emphases):

> WaterWeb offers an *open, inclusive online space* to share information, knowledge and resources on water, sanitation and related themes in India. Beyond disseminating information, it also *fosters participation from its audiences* with an *open-source format that enables general audiences (not just water sector experts)* to ask questions related to water with a service called Ask The Experts. Dedicated channels like Watershed Development, Water for Industry, Rivers, Climate Change, Wastewater, Water Quality, Rainwater Harvesting, Agriculture, Drinking Water, Water Bodies, Urban Water and Groundwater allow users to browse through sections that interest them, while the Directory provides a comprehensive database of individuals and organisations working in the water sector. Since *the portal is open-source, it allows anyone to post their own content* on the themes it covers. There is also a Calendar and Bulletin Board which regularly posts updates on events and opportunities in the sector. Our outreach channels – Facebook, Twitter, Youtube, Solution Exchange, to name a few – *help bring WaterWeb to a wide range of audiences, not just water experts*. The portal also *connects people & organisations working in the sector*.

In this description of WaterWeb, Krishna emphasized the overall openness of the portal to new content, to widely accessed social media platforms, and a diverse and broad public. Others, too, recalled Krishna as tending to the portal as a space open to all, such as Amna: "I think [Krishna] really wanted it to be an open source, a commons for everyone type of thing. He fought very hard for [that conception of the portal]."

But the sense of an open commons that Krishna and others conceived for the portal, as it was pursued, consistently evolved into exclusive projects which were set to primarily target and benefit elites. One example is the portal's Data Project, which primarily pursued the mass-dissemination of large datasets on the portal, at first, and, eventually, through the data portal created by the Government of India. But, as one board member casually remarked to me as I was interning with WaterWeb in 2011: Who stands to benefit from the mass-dissemination of large datasets? Many common people do not have the skills or literacy to analyze the datasets disseminated by the portal or to put them toward a functional use, but much more powerful actors, such as real estate developers, land and natural resource speculators, and large companies easily have both the skills to analyze large datasets and projects wherein such analysis could prove useful. Another example of how WaterWeb's pursuit of an open knowledge and information commons on water became directed toward elitist ends is found in its Digital Natives thought experiment, which transformed conversation within the WaterWeb about broadly targeting youth in India as a new audience into the small subset of youth who already could comfortably, playfully utilize digital technologies. The most revolutionary moments of the digital natives report belie this move (from a broad conception of youth to one which hinges upon a small, technologically savvy subset within that group) – when the authors of the report argue for going offline and for creating conditions for offline youth to become digital natives. But its events too, the very moments when WaterWeb could attempt to reach non-elites, were similarly skewed toward elite audiences who were not only online but also highly educated. For instance, a coding contest targeted not marginalized youth or youth on the verge of computing but young people who already had substantial experience with coding languages and software programming.

Just by its medium, a film contest inadvertently narrowed public participation to those who already had access to video recording technology, though portal staff attempted to make the event accessible for a broad public by offering training in filming and video editing (though not access to equipment), designating a student category, reaching out to local schools for participation, and permitting films in a variety of languages. While these events and projects were imbued with enthusiasm, optimism, and creativity, they often evolved into niche experiments with or for elite audiences of various kinds even as portal staff simultaneously voiced intention to reach new, often marginalized publics.

The expertise centralized by the portal during this era of management was various. Internally, WaterWeb and its board of directors privileged particular expertise in high technology, which was reflected in the past affiliations of its managers with prestigious tech corporations and technical educational institutions. But this expertise in high technology manifested more in the culture and philosophy of the portal – as, for instance, the portal's experimental, creative, "start-up" style of programming, which took the form of novel events, collaborations, and acts of publishing – rather than as distinctly technological expertise. In portal content itself, only a few sections of the site overtly centralized experts, such as the Data portion of the website which published highly technical informational formats that only people with particularly specialized skill sets or interests could find usable. On the "Ask the Expert" page, portal end-users posed questions about water and received original answers from topical experts, often government representatives, a laborious process that was facilitated by WaterWeb. Perhaps ironically, it was this area of the site which housed one of the most salient and inclusive benefits WaterWeb ultimately offered: a direct (and rare) channel of communication between members of the public and experts with power and

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knowledge of governance. While the answers given likely did not always result in a lasting solution for the querant, they were often detailed and earnest, and the exchange between citizens and governing officials that they facilitated presented a promising and fundamentally democratic good for the publics who could access the portal. This feature of the website, though, was later changed to a static collection of webpages which gave answers to FAQs (Frequently Asked Questions) since a live and interactive question-answer page required extensive labors, especially since portal staff managed the page so to require the participation of relevant and credentialed experts.

Early in Krishna's tenure as portal director, a report on the performance of WaterWeb and was conducted by a European online media consulting agency. It revealed a portal staff which estimated their audience to be, primarily, water experts. The report, based on interviews with portal staff and a review of the website, echoed the perception of WaterWeb staff that it was a site primarily for experts who are construed as "engineers, academic researchers, bureaucrats and government agencies working in this [water and development] sector." But the media consultation group encouraged WaterWeb staff to drastically alter much about the portal – its informational architecture and overall design, the readability and types of its published content, and the side projects – in order to become relevant and accessible to non-expert audiences (often referred to as "laypeople" or "layusers"). The report reads: "The primary audience of water experts know exactly what they are looking for, are the most likely to manage navigating the site. However to a lay user the site is daunting in it's array of content, most if it haphazardly organised." The same report found the language of much of the portal's content to be suitable for those with a post-graduate (Master's, Ph.D., or equivalent) level of education.

Well aware of the inaccessibility of a website which was meant to be a broad social good, the website was redesigned, and Krishna and other portal staff attempted to reach new audiences through offline engagements, other broadcast media, and new content strategies. However, plans to reach new and less elite audiences often skewed as they developed and eventually materialized in connection with yet another highly privileged group. In part, these deviations, which compounded the exclusivity of WaterWeb's online community, were due to the fidelity of Krishna and his staff to particular ideals of techno-informational citizenship which had been set out by the National Knowledge Commission. They sought to work at distinctly national scales and, in doing so, participate in altering the conditions of citizenship, as their Data Project and digital natives thought experiment showed. Though they had made many experiments and the portal that they handed off to the next generation of management reached many more people than before, it was still a portal primarily used by highly educated, elite audiences.

From Beacon of Techno-Informational Citizenship to Soft Development Journalism

By the summer of 2014, much had changed at the portal. It had been over a year since Krishna had left WaterWeb and Dev had also recently quit. Both left, they said, because of changing management and work culture within WaterWeb's host organization. While some portal operations were running similarly to before they had left, many things had changed at WaterWeb, and the mood was saliently different. Two new people had been hired to manage the portal, Mohan and Danika, and they brought new philosophies and priorities to WaterWeb, as Krishna and Dev had, and thus changes to the content and production models at the portal. Though restricted by the structures that Krishna and Dev had built earlier – past

writing staff and many of their labors were kept in place – Mohan and Danika instituted

changes that slowly transformed WaterWeb from a digital repository to what they and other

staff thought of as an online magazine. The transformation underway during this era of

WaterWeb was driven by an overt concern for expanding the audience to more – and more

diverse – groups of people, and it marked a full departure from commitments to techno-

informational citizenship that had dominated earlier ideations and pursuits of the portal. In

this final section of the chapter, I draw upon ethnography of the portal to show how

WaterWeb management and staff sought to expand the reach of the portal to a broad, diverse

audience but, despite their efforts, continued to produce a portal based on particular kinds of

expertise and to cultivate an online environment which was primarily accessed by highly-

educated elites working in water-related professions.

Online, WaterWeb's presence had evolved to fully encompass many of the new

models it was first exploring in 2011. It had professionalized its newsletters and writing:

writing staff regularly requested and were sponsored by WaterWeb to receive training in

journalistic writing, video production, photography, and social media, and before their

writing was published, it was reviewed and corrected by a full-time copyeditor, Danika, who

was then developing an editorial policy for the portal. Writing at the portal, also, was very

different than it had been in 2011; writers now attempted to frame many articles with details

or story arcs which would appeal to broad tastes, largely with human-interest framings. To

support these changes in content production, the staff size of the portal had grown to several

times what it had been in 2011, so rather than one office in Bangalore with a small

WaterWeb team with perhaps a couple of consultants outside of the office, there were now

multiple labor nodes of WaterWeb work in Bangalore and Delhi and a substantial team of remotely based consultant staff.

As before, many of its online changes reflected how WaterWeb had changed socially. It had brought on a full-time copyeditor, Danika. Danika had established a profession in finance before she had come to WaterWeb, but copyediting and blogging had long been passion projects for her, and Danika was an important force for institutionalizing journalism as the new content model within WaterWeb. But Danika's role was hardly limited to copyediting. In the vacuum left by Krishna and Dev, who had both held strong visions for the portal and who had guided staff tightly in pursuit of those visions, Danika was asked to fill the absence of the manager for the content team, and she was often looked to for a long-term vision for WaterWeb from many of the portal's staff. In this role, too, Danika advocated for journalistic standards and content models that, in advocating particular notions of neutrality, went well beyond removing jargon and simplifying the language of WaterWeb articles. WaterWeb had also been appointed a new director, Mohan, who differed from Krishna in many respects. His professional background and aspirations for the portal were not in the field of high technology, as Krishna's were, but, rather, rural development[39]. He also was

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[39] Though in Mohan's most recent position, he too had worked on a "digital natives" project, though his conception of the idea was much more grounded in the political and activist possibilities of the group than in their playfulness. He made this difference evident in an interview where he told me that

> [one] function of technology, which is much more relevant for [WaterWeb] is to see if it can be used as a political tool. By political, I again mean not party politics but it is to shift the power equation once again, and this, in my earlier avatar, my part of the knowledge program [at his previous organization] was on digital natives. At that time, the Arab Spring was going on, so we were trying to analyze what was going on, and essentially, when the state is very repressive, when there are limits to your freedoms of expression, then technology can play a very subversive role to mobilize plan and, which is again, leading towards changing the power equation between the state and the citizens. Yeah, so what happened in Egypt, what happened in Tunisia— Where were the first two nations— was it the vegetable cart seller from [Tunisia], that's where it started? Yeah, I think so. So we started that and basically that led us to believe that there are digital natives, or digital citizens who work with technology in a very subversive way.

hired to oversee *all* of the programs sponsored by WaterWeb's host organization, not just its online knowledge portal. As such, Mohan did not devote all of his time to WaterWeb, as Krishna had done. And while Krishna had a particular vision for WaterWeb that he attempted to execute through various experiments and projects, Mohan attempted to make decisions according to a very participatory process that numerous staff members could join; when staff did not have strong ideas, however, decisions were often made slowly, in piecemeal fashion, or by one or two more opinionated members of the team. In some cases, when the staff could not come to a conclusion in their discussions, decisions seemed delayed indefinitely. Elsewhere, the founder of WaterWeb and its host organization continued to exert an influence as Chairperson of the board of directors, but a new CEO had been appointed at the host organization who had brought sweeping changes throughout the organization. Some of these changes trickled over to WaterWeb in the form of an increased emphasis on performance metrics and a new priority of "integrating" the activities of WaterWeb with its host organization, a process I will explain further below.

It thus came to be that several years after 2011,WaterWeb had not become a perfected machine of experimental development techno-media and all-India reportage that Krishna and Dev had designed it to be. For one thing, the portal's all-India reporting model was faulty, as writers had found over time. Travel over multiple states, the minimal size of one writer's coverage territory, was long and exhausting. Covering such large regions was often futile. One staff writer, Kalyani, was responsible for reporting on multiple hill states – Uttarakhand, Himachal Pradesh – but also Bihar and Uttar Pradesh, two of India's most populous states. Based in a small village in the Himalayas, simply coming and leaving her home to go to another city took at least several hours in such mountainous terrain. When I visited her in

May 2015, I rode along with her as she drove three hours to get to her village from the nearest train station. Similarly, key geographies could go uncovered for months when a staff writer left the portal. Many portal writers also found Dev's managerial style overbearing. They described constant emails and phone calls – dozens in a given day – so many that several writers would routinely avoid his communications. While this managerial style kept everyone informed on matters they may have not known about otherwise, some found it intrusive. Further, with his repository concept, Krishna had envisioned the web portal as a unique digital genre which could archive and publish a seemingly limitless variety of media and media-forms, but several years later (and under the new managerial regime), the portal was now discussed in the terms of a much more uniform and predictable genre: an online magazine. Indeed, the "repository" was spoken of repeatedly as a model which had been essential for filling the portal, a complex structure which promised comprehensiveness in its publishing of an array of media forms, but a model which was to be moved on from. Nidhi, the portal writer who had been with WaterWeb the longest and had worked under the management of three directors, described some of these changes in an interview:

> LV: How has the organization changed since when you started until now?
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> N: It has chosen a certain path. Instead of putting everything, you know, dumping everything on the website. You know, a bunch of views, dumping everything, they are now focusing more on more storification, more readability, and select pieces basically. They are also focusing on other forms of contents, like video, photographs, photo essays and all. Now they are focusing on data stories. So the focus is a little more diversified. So it's not that you're just dumping data, but you're writing a story about it also.
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> LV: Also, since you started, the organization has been—If you look at the personnel and the managing style, it's gone from [Rajeet to Krishna and Dev to Danika and Mohan]. There have been a lot of changes. How did it differ between each person?

N: See, Rajeet [WaterWeb's first director] and Krishna, they had a very hands-off sort of—They were not directly dealing with, contacting us, or interfering with the work. Dev was the main person [who managed the writing team], and there was an overmanagerialism which was taking place.

LV: How often would you talk to him?

N: Any time of the day he would call! (laughs) I wouldn't talk to him, he would call me, that's what it was like. (laughs). But he was also keeping a tab on everything. That was his functioning, his style. This is a very different style now, and I like it (laughs), I like this style more. It's a matter of choice. You know, somebody [a manager such as Dev] can say *ki* (that, in Hindi) at the time, you know, 'Somebody informed me that a training is taking place here and [another event] was taking place there' and so on. He would keep you very informed. There would be 20 emails in the day, and we would constantly keep in touch with [contacts for stories]. Now that may not be happening, but as grownups, if I think I should be trained in something, then I approach [WaterWeb managers]. There is much less control now. And the main difference is that the pieces were not edited. It was only when Danika came that these editorial processes started. We used to directly put up the stuff (laughs), so the quality would get compromised. And we were spending very little time. Now, we are putting in more time, we are going through an editing process.

Nidhi described how managerial styles and philosophies could redirect the content production overall at the portal as well as, of course, everyday labor conditions. She implied that a "repository," in Krishna's realization of the concept, meant "dumping" as much content as possible on the site regardless of its perspective and state of completion. Under the direction of Danika and Mohan, the portal was now moving toward a more narrative-based and polished style of writing. Moving on from the repository model was a consistent theme as the new management of WaterWeb set the agenda for the portal as well. For instance, in an all-staff summit held in early 2015, Mohan said, "So basically what we are saying is that the idea was initially to create a repository. We've done that, and we are proud of that. Now we are saying that we should be focusing on delivering the knowledge to a wider audience, that is well-taken. Sometimes it has come up, after repository, now what? … That is a fuzzier

area." Echoing these concerns was the CEO of WaterWeb's host organization, who asked, "as we expand the horizon beyond just a passive repository, then what does it require to close the loop on that?"

In the place of the repository, journalism and development media had become the de facto paradigms for portal labor and planning. Implicitly that category – magazine – implied that portal staff and management had come to accept routine labors of content production, rather than the experimental forays Krishna had pursued, but they did so while still offering merits of a magazine, such as regular publication, thus updated and new coverage on water and related issues, and a wider, sometimes more exploratory, range of writing and media that might be found in news publications. Writers each submitted, on average, one or two original pieces per month. Though these original pieces comprised only a small fraction of the total published content, which was by far characterized by news and policy summaries and, less commonly, materials sourced from other NGOs, they were often the mainstay of portal strategy discussions.

As a copyeditor, Danika played an essential role in the working model of portal content production. Soon after she was hired, every original piece of writing went through her editorial review before it was published, and she often suggested substantial changes in the writing style and overall content strategy for the portal. She had no past professional experience in water issues, but she considered her inexperience as an important asset in her copyediting work since it enabled her to identify moments when portal writing became too technical or riddled with jargon. As she explained in an interview, "If I don't get [a word or a phrase], then it's not going on the portal. But if I become completely invested in the subject and all of that, I will start understanding all of these things. I will understand what is a

'watershed' or I will understand what is 'participatory groundwater management.' We don't want things [jargon] like that on the portal; we want things that are easy for people to read."

But for a portal that had for years considered its principal audience to be water specialists working in civil society – just one way WaterWeb centralized development NGOs in its work – many WaterWeb writers felt that removing what Danika considered jargon actually alienated the one audience segment which they understood, as reflected in one writer's comment during the summit: "We work in the water sector. If you decide that you will not use the word 'watershed' or in the first paragraph you start defining what is a watershed or you start defining a pastoralist, it alienates people. I have gotten some feedback from people that it's too simple. It alienates them. They would have otherwise read [the article]. They choose to read *Down to Earth* instead, which uses these words. They are really good articles. If you compare us with them, they are good articles, they have stories, everything. But they do use these words." Though some portal staff found the recent jargon-free editorial policy to be alienating to many of the portal's most consistent end-users, they also thought that it had helped improve the quality and accessibility of writing at the portal overall.

Under Danika's guidance, neutrality also became an important guiding principle for WaterWeb in everyday decision-making about publishing as well as in discussions of long-term strategy. Neutrality was largely envisioned as limiting portal writers from expressing strong opinions, though writers were encouraged to quote the opinions of experts and to present "both sides" of an issue. Danika emphasized the importance of expert opinions during an all-staff summit in early 2015, "We've come a long way since [the repository phase of the portal], but I feel that we are basically stuck now. So where are we? Should we

be in the position to influence? By giving our opinion? Probably not. But can we do something to enable that opinion from an expert to reach somebody who might need it? Without us standing there giving our inputs in, saying that we think what this expert is saying is right and what this expert is saying is wrong, without providing that value-add. Are we in the position to do that?" It was not that writers could not have opinions, but those opinions should be confined to the subtleties of selecting a topic to write about, the experts and particular quotes to include, and such other decisions about framing, as Danika reiterated during the discussion with the writing team, "Most of our opinions are our own. And we hesitate to be controversial, because it's our own opinion. [Speaking to one writer] We discussed that for your one article, right? I said we can't post it the way it is, right? Because you're part of [WaterWeb]." Opinions under this policy of neutrality were best when sourced from an expert and balanced with at least multiple perspectives, though WaterWeb's administrative staff held the view that the writing team did not include enough contrasting viewpoints (e.g. Danika, again during the summit, "we need contrasting opinions also, and we are not presenting that today").

For Mohan, the director of the portal, portal writers could state opinions in their pieces but only after having gone through a thorough process of journalistic research and writing. After proposing a three-part model for writing stories in which the first kind of article would summarize government positions on various policies or topics, the second would offer an account of experiences and sentiments in relevant communities about the same policy or topic, and the third being an analysis of all the perspectives, he proposed some room for writing staff to take a position: "The third [kind of article] is our own analysis of what we make out of what the government is saying, what the community is feeling, and

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what the [background] research is focused on. That is something we can write and present as a view of [WaterWeb] based on the analysis we are doing on the other sources." As in the tradition of newspaper editorials, the opinions expressed in these original articles would represent the views of WaterWeb, not just the writer who authored the piece.

But the model of journalism that WaterWeb was developing was unique: It featured largely professionals with experience in the water and development sectors re-trained as reporters who cultivated regional contacts and who, through those contacts, regularly reported on water-related issues. The blend often became confusing for portal writers, both in deciding whose opinion could be voiced on the portal but also even in simply presenting themselves to people as they reported on stories, as a question by one portal writer revealed:

> Ishaan (WaterWeb writer): One thing that is very confusing to people is how to present yourself, whether you are a journalist, an expert on water, or an NGO. One person asked me to write a paper with him; he thought I was a journalist. I said, "No, I—"
>
> Danika: I view the team as journalists.
>
> Mohan: I would say journalist, but the idea is to [target topical] specialists. So they get invited. … Obviously, you don't know anything about water. You know how to write. *Main seek raha hoon* (I am learning, in Hindi), and I have to cover these things.
>
> Danika: A development journalist or whatever it's called.

The writer who asked this question was the only person on the WaterWeb staff who actually had been formally trained as a journalist and who had worked professionally in that capacity. But even in light of his past professional experience, he did not immediately place himself as a journalist in his role at WaterWeb. Yet the managerial staff, Danika and Mohan, increasingly saw WaterWeb, and its content production team, fulfilling particularly journalistic roles.

Even though they were encouraged to limit opinions to quotes from experts, portal writers were given freedom to select the topics they wrote about and the genre and form they published in. In one case, for a new employee, Ayush, who had many years of professional experience in social work and water but whose written English was poor, filmmaking provided an acceptable alternative to written articles for both him and the portal's management. While he still wrote short articles for the portal, he put much more energy and time in to making short films about water. Initially these labors were to simply make do for an imperfect situation; however, soon Ayush won several awards for his films and he also took great personal satisfaction in his filmmaking work. He said, "From the last two years almost, I am more focusing on this visual and film media. You know, the Dalit film, which I have recently done, after I've shown that film to— after there's been a screening of that, after looking at that film, people will make 10,000 copies and circulate them in villages and all. That has some impact. If I am looking at dissemination, it is reaching the masses – not only the urban masses, but also the affected people are taking that content to them. This makes much sense to me and my work." The portal's management, too, saw his film awards as reflecting the merit of WaterWeb and content of the portal overall.

Writers often sought out relationships with NGOs or development professionals as they went about their reporting, and they did so for various reasons. Many, having worked for various non-profits in the past, had existing contacts embedded in such organizations. Water-focused NGOs were also often the most consistent sources of updated information on water, which was useful for a writer who had the constant burden of coming up with new lines of reporting on water which, ideally, could be broadly considered as relevant and important. For Ayush, talking with development professionals and researchers helped him

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come up with new ideas for stories, as he told me, "When you meet some people, there you develop an idea. He or she is working on certain issues. Then, I thought, why don't I make a film of Dalits and water?" He also regularly consulted a larger social network of development practitioners and non-profit organizations that he had cultivated over years of working in the water sector as a researcher and social worker, saying

> Now I am looking at the water sector as a whole. Not only the [water] privatization [which he researched as a part of a previous job]. Privatization is just one part of it. I'm also looking at agricultural practices; I'm also looking at the communities which have been affected by it; I'm also looking at urban water supply issues, which are existing and how they are changing up, and also looking at the sanitation views and how much it is feasible or not and how people are looking at it, and how things are changing in urban the context, what is happening in rural India, what new conflicts have been emerging over these years in rural and urban India, how migration is related, how food and water have been related. So of course, I'm not an expert, but I know some experts who are working on such type of issues for all these years. What I can do is I can bring their thought process to the main media.

Ishaan, a WaterWeb writer based in Punjab, often tried to do his reporting without intermediaries such as NGOs, but he found that alliances with NGOs, when they were possible, significantly assisted his work. Contacts with NGOs could provide both local context about water in a given area, and they could facilitate open, productive conversations with people, as he said in an interview,

> See, if an NGO is working in some area, they would have built some trust in that community, and if they take you there, the community would trust you because you've come with somebody they know. They would be easy to open up to you, they would talk to you, they would talk to you in detail. But when I go by myself and I tell them I am from Chandigarh, they suspect I am a government official who has come to investigate something. They always ask what government schemes I have come for. Or they always ask, 'Have you come for removing us from a government scheme? So are you investigating in all of this?' Then obviously you have to talk, tell them, explain to them. You have to explain the paper you are working for. But it's not a local paper, and they have not heard of [WaterWeb] before or they don't use the computer or Internet. So you have to tell them what's the thing you are working for, you have to kind of explain to them. It's not that they don't talk to you, but it's just

that you have to work on building that trust. It takes a lot of time. And
sometimes [even after that] you understand they are lying to you, because they
still don't trust you. So you have to talk to multiple people.

Another writer, Kalyani, would keep up with water-related happenings in her region through
a variety of means, including Yahoo! groups, newsletters, water-related events, local
newspapers, and a network of contacts who she regularly called. Many sources for stories
came through NGOs, either because Kalyani had seen media they had produced, attended
events they had participated in, or just kept in touch with them as a part of a larger
relationship. When I visited her to interview her about her WaterWeb work, Kalyani took me
along as she conducted research and interviews for a story she was writing, and she also
introduced me to one NGO that occasionally featured in her WaterWeb writing. A grassroots
development organization in the sense that most of its employees are from the area (96%, its
website says), the NGO had helped facilitate the resolution of several water conflicts and
trained villagers in monitoring and preserving their spring and groundwater sources. During
my time with Kalyani, a social worker from the NGO accompanied Kalyani as she went
about the reporting for her article – attending several village meetings and interviewing
women who had been trained by the NGO as what Kalyani later referred to as "barefoot
hydrologists." When the article came out about three weeks later, Kalyani's story focused on
individual women, whom she named (unlike other WaterWeb articles discussed earlier in this
chapter), and how they had been empowered through their hydrogeological training. While
Kalyani mentioned that their training had been provided by the NGO, the narrative focus of
the article was much more on a villager and her achievements than the organization. Even so,
this was a long-standing relationship. The NGO appeared in numerous articles written by
Kalyani over the years, and when I visited the organization, its director had described

WaterWeb as a key media partner, saying "[Name of NGO] is an on-the-ground organization, so not very good with media and writing reports. [WaterWeb] has played a very complimentary role for us. [WaterWeb] is helping spread the word around about our work]" (field notes, 22 May 2015). Non-profit organizations, key institutions within the larger development apparatus in India, were thus important nodes for the creation of WaterWeb's media. They were often looked to for expert commentary, article ideas, and access to local communities.

Such alliances were encouraged by WaterWeb's host organization, especially if NGOs in WaterWeb reportage were already funded by or partnered with the philanthropic trust. Indeed, since a new CEO had been hired at the host organization, "integration" – several processes meant to unify the work of WaterWeb with its host organization – was newly prioritized. "Integration" was pursued in several ways even as it was often resisted by portal staff members. At times "integration" was a policy wherein writers were encouraged to cover host organization partners or grantees. In these cases, some writers saw "integration" as a thinly veiled attempt to transform the portal into the host organization's mouthpiece or into, at least, a media ally that was publicly laudatory of their host organization's work. "Integration" also was the reason why Krishna had not been fully replaced and why Mohan was to oversee not just WaterWeb but all other programs funded by the host organization. Staff meetings also changed as a result: Under Dev, the consultant team of staff writers and content aggregators had met annually or every several months for a staff retreat where they would travel to a compelling site of water stress or management in India and spend several days learning about water needs, demands, and management in that location. These retreats were ended with the portal's new director, Mohan, who instead starting bringing together all

portal staff, including, for the first time, the Hindi and Kannada portal groups where they would discuss recent water policies or events and reflect on the performance of the portals. Teams or partners of the host organization would be brought into all-staff meetings at WaterWeb to educate the staff on ongoing developments in the water sector.

New priorities, set by the management at WaterWeb and its host organization also included performance metrics and efficiency. Portal writing staff, whose employment was dependent upon a contract that was reviewed and renewed annually, continually faced a climate where input, output, and outcome were increasingly measured and important. This was driven, in part, by the near full replacement of both the portal's and its host organization's managerial staff, who increasingly expected the portal to perform at high standards. However, the portal was such a new form of organization and media – and no one working for the portal had previous professional experiences with a digital media enterprise – that no one quite knew *what* those standards should be. In its place, portal staff, particularly its contractual writing employees, were subjected to forms of review and analysis driven by concerns about return on investment and user metrics, facilitated by the emergence (and institutionalization) of Google Analytics in the previous few years. During one review by the Bangalore office, it was found that each original story cost about Rs. 30,000 or the equivalent of about $500, an exorbitant sum for journalistic writing labor in India. Lalitha, an administrative staff member summarized this new emphasis on ROI (return on investment) and what problematic views of WaterWeb labor it had prompted, saying in a meeting, "It's really a question of if we break it down per story, how much are we spending? I don't think there are even Pulitzer-Prize-winning journalists who get paid—If you are looking at paid content, how much does a senior journalist get paid to write an article in a main stream

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newspaper. If you look at our costs, travel and time, it's coming to something ridiculous, like 30,000 Rupees per story, and they're not even like— Even we don't (laughs), even we don't read them." A different review at the portal came to even worse conclusions, finding that the most accessed articles were hardly ever original pieces but often end-user questions, datasets, or summary articles. The metrics of Google Analytics were brought up in every board meeting which reviewed the portal, and though neither the managers or board of WaterWeb were explicitly decided on what exactly the Google Analytics values meant or should mean for the portal, tacit assumptions abounded. It was expected, for instance, that the number of unique end-users who visited the portal should increase over time. And if original articles were so costly to produce, shouldn't they drive traffic on the site? For those original articles that received only sparse amount of traffic (no hits to perhaps a couple of dozen views), were they worth the money which had gone into them? There was an increasing sense among the managerial staff at the portal that writers, though valuable in their own right as people with incomparable regional expertise and social connections, needed to work more efficiently by producing more and more impactful articles which could grow WaterWeb's audiences.

At the heart of concerns about efficiency, metrics, and expertise in this era – and its turn to journalism as the primary model for content production – were much more substantial concerns about the overall reach of the portal (i.e. the size and makeup of its audience) and the extent to which citizens participated in WaterWeb as a project. Indeed, the all-staff summit in 2015 was called to assess the existing portals and re-commit to a vision for each, particularly in light of strategies that would expand the audience in size and composition. These priorities laced through the two-day summit more than any other topic, as statements made by the founder of the portal made clear:

Clearly we are providing a lot of value to some people, I would say we are providing some value to a lot of people. Now there is still a lot left to do, because we want to provide a lot more value to a lot more people. … [Mohan] has said, [the CEO] has said, we've said 'Okay, How do we define the next set of audiences?' One thing I've already said, I don't need to say it again is that the game is changing really fast. … One is, the platform and the media themselves are changing rapidly. Democratized access. How can you have a knowledge website that is impervious to how people are dealing with communication tools? You can't have that, you'd be irrelevant in two minutes. How do we make ourselves more relevant to the changing media structures? How can we invite more participation? Some of these are not issues you all can handle or it needs a structural alteration, which we will do.

The portal was continually encouraged by its founder (who was also the Chairperson of its board of directors) and others to fulfill its initial mandate of becoming a knowledge commons that would, ideally, become so relevant to the general public that it would be taken over completely by citizens. But, as discussed above, improvisational end-user activities and contributions had only declined over time, and most analyses, including my own end-user survey, found the portal's audience to be confined to a highly educated elite.

Mohan, particularly in the breakout session with the writing team, made numerous suggestions for incorporating water experts and specialists as guest contributors to the portal, gestures which he and Danika explained as diversifying the number of perspectives published by the portal. But these suggestions, too, he clarified as being motivated by expanding the general relevance of WaterWeb to general audiences:

Diverse perspectives is [sic] part of content. We are defining that. We want more interaction, engagement. Loosely that's what it is coming to. We want more outreach. We have to define who we want to reach out to, who is currently left out. And in the nature of the creative commons, we want more ownership. Is that ownership through more public contribution? It's a public-facing portal. What does that mean? Currently everything, all of the content is tightly controlled on the portal? Does that reflect the philosophy of a creative commons? Or a public commons? If that is what we want to build as an ethos or philosophy of the portal? Then the vision will be articulated on this forum?

The turn to journalism itself had followed from several writing workshops in which portal staff were trained to write in ways that would appeal to the larger, non-specialized audiences WaterWeb staff hoped to attract. According to one administrative staff person in the Bangalore office, these workshops often demeaned the work of the writing team, "Like [name] says, they're not even great writers. We put all this effort and resources into teaching them how to write— A consultant came in who is a very good writer, a media person who had a very my-way-or-the-highway kind of persona. He said [to the team] that 'what you write is shit, and no one would read that'" (field notes, February 2nd, 2015)[40]. One result of these workshops (and degradations) was a new staff hire, Danika, as a copyeditor who could help the writing staff improve their writing and institute consistent editorial policies.

These statements and events depict a portal that far removed from the WaterWeb of previous years ,which shunted broad conceptions of audience into narrow, elitist terms or projects, such as the re-interpretation of Indian youth as "digital citizens." Rather, discussions during this era of the portal reflected a staff that was oriented by a concern about the broad public relevance of the portal, the extent of audience engagement on the site, and moving beyond what had congealed to be a rather elite audience even as it curtailed the ability of end-users to post unmoderated commentary, upload content, and submit articles. While these limitations kept the site from rapidly devolving into the informational dystopias of many unmoderated Internet fora – and the staff from having to moderate and demonstrate authority on potentially controversial issues – it also narrowed the overall active engagement of citizens on the site as well. Deferral to expert contributions was one way to expand

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[40] The same staff member remarked on other occasions that the writing team was "worth more than the whole [WaterWeb] platform," so deficiencies in writing did not necessarily devalue the team overall in portal management and planning.

perspectives and thus audience and one which was frequently encouraged by WaterWeb's managerial staff at the time. Guest writing from experts, though it could potentially include new authorial voices and analytical perspectives, did not necessarily promise to democratize the portal in the sense of making it more accessible to those of lower levels of education. Nonetheless, even if the repeated, though highly varied, gestures to centralize expertise on the portal ultimately created an elite knowledge portal that saw little audience engagement, it was not because the staff were unaware or unconcerned about these issues.

Indeed, as the portal shifted toward the model of an online magazine, its internal labor processes also shifted, and in ways which made the portal less open to voluntary, citizen-produced content. Once it started adhering to particular editorial practices, for instance, managers began to consider WaterWeb as a completely internally moderated space and its published content as largely reflecting the views of WaterWeb even though they sought to create a more diverse and open online space in the future. Thus when WaterWeb received a voluntary submission that overtly supported dams and dam-building, for instance, WaterWeb refused to publish it, saying that there was no longer space, as there had been in the repository era, for articles to reflect merely the views the individual author and not the organization overall. Danika expressed these policies in a statement that also reflected how she and Mohan's found them problematic at the same time. In an interview, she said,

> We operate under the commons, which means that, yes, everything that we have is available for everybody to use and share – just with attribution. But what does it mean as far as other people being active on the portal? We don't have that space at all. Even that is a moderated space today, but it shouldn't be, right? Why can't we let people come in and express what they want to say? We don't have to be policeman and edit each and everything. I don't believe in that. So, we've gone and we've moved away from that, and I don't know why. I think the earlier version of the portal, if you've seen it – it had a blog section, it had a lot more sort of interaction with people. And that's completely stopped now. So I'm basically pushing to bring all of that back. I

think it's necessary. This is a pretty important subject, so I think it's definitely necessary to bring some of these things back to the people. And those are things where I really appreciate Mohan. He wants this. He wants that openness, he wants that transparency in how we operate. Rather than everything being sort of a closed—where everything has to pass through me, the editor. Why? No, it [shouldn't] have to. What do I know? If someone sends me a very strongly worded article, rather than me editing and publishing it, it should go under their own words, under their own name. So then, there are no questions. It's not [WaterWeb]'s view, it's somebody else's view. Somebody sent us an article. I forget the person's name now. He's completely pro-dams, and he wrote in some really strong opinions. We sent it back, saying 'I'm sorry, we don't publish articles like this.' But what the team does is, the team obviously is going to present the other side, which is a community perspective. It's the perspective that's never heard. Media doesn't have the space for a small village that's struggling with contaminated water. They only have the space for Coca-Cola that's is polluting the groundwater there, right? So, yes, I understand why we need to be that other voice, but we shouldn't restrict other voices from coming in also, I feel.

Danika found merit in WaterWeb's work – it represented what she referred to as "a community perspective," which was an important one that mainstream media didn't prioritize unless a well-known corporation or dramatic controversy was involved. In this way, WaterWeb, through its team of reporters, could, as she said, "be that other voice." But, at the same time, Danika and Mohan also had found that the particular model of journalism they had built over two years, even though they looked to it to create a much more broadly relevant website, did not enhance the website's intellectual diversity and even had an adverse effect on citizen participation. They thus sought to move away from such a closed interpretation of WaterWeb even as they continued to refine their model as a distinctly journalistic one.

Over the previous two years, journalism had come to act as the predominant internal expertise of WaterWeb. Following several stages noted by Carr (2010) – socialization, evaluation, institutionalization, and naturalization – in the proliferation of expertise, journalism (particularly Danika's instantiation of it) had thereby come to deeply structure

WaterWeb content. WaterWeb writers were socialized through trainings and staff meetings to write in what she called "Plain English" and in ways which minimized their own opinions but could flexibly quote "experts" at length; Danika's editorial reviews made sure each piece of published content similarly conformed to these standards; and they were further institutionalized through strategy discussions and plans. Journalism provided the logics by which information was filtered before publication on the portal and by which portal staff were trained to write. It thereby demarcated boundaries, enforced by Danika during her editorial reviews and Mohan during strategy meetings, of who could say what on the portal. Particular words and phrases (those identified as jargon, such as "watershed" and "participatory groundwater management") were targeted in these exercises as were any opinions made by the portal writing team which were unsubstantiated by expert commentary, quotes from "the community," or background research. This model reserved a central place on the portal for the voices of experts, often development professionals or NGO representatives, who, through the selective framing of writers, could speak at any level. They could contribute to the background research of a topic, provide opinions or analysis of a given situation, or even speak on behalf of a group of people. Ironically, though almost all portal writers had extensive professional backgrounds in water and development – backgrounds that were otherwise considered sufficient basis for expertise in WaterWeb reporting – they were not to overtly express opinions in their writing. Alternatively, non-expert citizens, who were meant to be the primary beneficiaries and participants of the NKC's web portals, could speak, in this format, only as witnesses or exemplars of events and experiences which fit into the frames designated by portal authors. While this system could result in moments of accountability between government representatives or other authorities

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and various groups of citizens, whether such moments occurred depended on how portal writers framed and pursued their stories. But journalism was not considered the only expertise that should shape the portal; topical expertise on water was, as well. Indeed, if journalism provided a grammar which determined which content was appropriate or not for WaterWeb, expertise on water – and, based on my review of media published during these years, particularly NGO expertise on water – was the expertise which portal managers identified as desirable for portal content itself.

After two years of pursuing a journalistic model for content production, WaterWeb continued to primarily reach an audience of highly educated, male water professionals. Though journalism was consistently looked to for its ability to render WaterWeb writing more accessible to general (i.e. less elite) publics, several practices and values observed by portal staff confounded its attempts to reach such new audiences: the turn to journalism, and administrative decisions made earlier in WaterWeb's history, had created an online space which, in its current form, needed to be moderated in full. This, in turn, restricted the ability of the WaterWeb staff to publish voluntarily submitted articles and of end-users to post anything aside from article commentary on the website. Further, the portal prioritized the views and knowledge of development NGOs. WaterWeb staff not only privileged the opinions of NGOs in their writing and the knowledge and facilitation of NGOs as they wrote their stories, they also saw what they called "the water sector," a group primarily comprised of water-related non-profit organizations, as its largest and surest audience segment. The portal thereby became a media enterprise both for and of development professionals and practitioners rather than the broad, general public its staff hoped to reach.

Discussion

At a WaterWeb meeting held just in the beginning of my fieldwork, in July 2014, one of the advisors to WaterWeb's board of directors introduced the portal and his relationship to it with a seemingly benign comment. He said, "From the beginning, the idea of the portal was very different than it is today. Part of that is because of all of the people who have become a part of it." Each portion of this analysis can attest to his claim: Throughout each era of the portal, from its initial conceptualization within the National Knowledge Commission through every moment after, WaterWeb changed drastically because of decisions, priorities, and philosophies of those involved in it. WaterWeb's sprawling repository reflected these changes. Dozens of employees and interns had impressed themselves onto the media and organizational forms that the portal took over its first ten years. The total volume of the matter that these people generated came to be stored across several portals, media platforms (e.g. YouTube, Flikr), and in the memories of those who worked on the portal. This archive was so voluminous that any homepage design could only make small gestures to the total themes and genres that had been created. And however narrowly defined or faulted one particular content model pursued in the history of WaterWeb might have been, the portal was an assemblage of these materials and eras and, as such, could hold all the media which it had published in years past. With these diverse influences and paradigms, the portal came to loosely and idiosyncratically approximate its own kind of democratic forum, but it did not achieve the core of its original public purpose.

If the portal was a democratic forum that assembled the varied knowledges, contributions, and inquiries of the citizenry, it was only democratic at an intimate scale and among audiences which were already highly privileged. To be fair, WaterWeb staff never

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claimed WaterWeb to be a particularly democratic entity – conversations, especially in 2014-15, were often driven by how to reach more people and to consider who might be left out of the portal's current audiences, but even so, the portal was distinctly meant to be, from its earliest conceptualization onward, a public good. As a distinctly public good, however, WaterWeb produced problematic unevennesses. These unevennesses were facilitated by numerous factors: WaterWeb's early experiments in techno-informational citizenship (or what it called digital citizenship) skewed many of its early publications and outreach programs toward elite audiences. WaterWeb's decision to work primarily through the channels of the Internet and English as well as its prioritization of NGOs throughout its content production further limited its scope of influence. Rather than equalizing what it had called "knowledge asymmetries" across Indian society, as it had been envisioned to do, it more so attempted to rectify socioeconomic inequalities and environmental injustice through creating an informational network of and for development NGOs and their staff.

Internet

Some involved with WaterWeb and other portals which resulted from the NKC's recommendations acknowledged that to work with the Internet, a medium which fewer than 5% of the population have access to was, in the words of one, "a bit of a forward position." Similarly, when I first discussed the portal with him over Skype in early 2011, Krishna acknowledged that the Internet was an elite medium but that WaterWeb was operating in anticipation of a much larger – and socioeconomically diverse – audience of Internet users. Though that swell of Internet users started was just starting to occur before my ethnographic research in 2014-15, it is questionable as to how much WaterWeb had designed the portal to

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be relevant and accessible to those newly online. It is clear that as the portal evolved, and as various expert discourses and sources increasingly proliferated on WaterWeb, citizen participation declined. Direct conversations between citizens and experts vanished, comments declined in general, and there became less space available for overall user inquiry and writing on the platform. The end-user survey suggested other disturbing patterns as well, such as the almost exclusive use of the portal by men and those with a Master's degree or higher level of education. These survey findings were presaged as early as 2011 when an external review of WaterWeb found the site to be readable for only those with an "Advanced/Doctoral Degree." (The same survey concluded that while the portal for schools was widely accessible and the Kannada portal was a little better, publishing at an undergraduate reading level, the Hindi version of WaterWeb was similarly complex and thus suitable for only those with an advanced or doctoral level of education.) Further, the end-user survey, which suggested that WaterWeb catered primarily to a select, highly-educated, and overwhelmingly male audience, came nearly two years after WaterWeb had instituted its new journalistic model for the site's content, which was put in place to ensure the simplification of portal writing and thus its relevance to broad, non-specialist audiences. Though making the site more accessible to wider audiences was certainly a chief concern during my fieldwork, it is unclear that the strategies proposed at the time – e.g. soliciting water experts as guest columnists – and practices such as limiting end-user participation on the site could overcome a trajectory commenced much earlier in the history of the portal.

Language

Unevenness was produced on the basis of language as well. Internally within WaterWeb, there were vast and long-standing discrepancies in funding and compensation between the English, Hindi, and Kannada versions of the portal. Though the Hindi portal, for instance, consistently brought in more web traffic than the English portal, it was expected to operate on a fraction of the budget (with lower salaries designated for individual personnel as well). Staff at Hindi WaterWeb had complained to me that while they had originally operated as a separate site from the English version of WaterWeb, the administrative staff of WaterWeb had at one point, recognizing the popularity of the Hindi version of WaterWeb and wanting to include those metrics in the reports of the English site, merged the domain names of the two portals. While I cannot attest to the motivations of these technical changes (they occurred well before my research), it was clear that compensation was starkly unequal across portals even despite the portal's overall popularity and reach. Though WaterWeb's director during 2014-15 was the first portal director to attempt to bring the Hindi and Kannada portal teams together with English portal staff during staff meetings – and the first to make initial steps at resolving compensation discrepancies – these issues were just beginning to be addressed during the time of my fieldwork. At all-staff meetings, staff from different portals were treated differently. While the staff of the Hindi and Kannada portals were expected to be self-contained, independent units which should succinctly and definitively report on their content models and strategies, the English portal was permitted to be effusive and exploratory – both in its content strategies and in its self-accounting at all-staff meetings.

These discrepancies naturally materialized in the content of the various portals themselves. Depending on one's language, one would encounter completely different media, information, and genres from portal to portal. While the English portal had experimented with repository and magazine models for content production and thoroughly relied on original writing, the Hindi portal operated primarily transcribed water-related articles in Hindi print media (offline) for online dissemination[41] and collected original pieces from a network of water-expert columnists. This work is particularly valuable because it has acted as a digital archive of Hindi media, expanded the potential audiences of environmental print media in Hindi and, in so doing, posed a counterforce to long-standing hegemonies of the Internet which have privileged Latin-character coding scripts and online writing. The Hindi WaterWeb team had also organized conferences for representatives within Hindi media and collaborated on water documentaries, which were sometimes shown in highly influential circuits such as ZeeNews, a popular news broadcasting agency, and even to members of the national parliament. The Kannada portal, which had not been relaunched, was conversely planning regional reportage in various formats that included bound volumes (to be placed in libraries throughout Karnataka), news reportage, songs, and stories. At the time of my research, even the formatting of each portal was significantly different from one another,

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[41] It is important to note that the Hindi portal team, though they largely redisseminated already published pieces, did not do what they often referred to as "cut-and-paste work." Rather, writing and especially typing in Hindi were widely considered technical skills that even native Hindi speakers could not perform easily. For instance, at one point during the all-staff summit in early 2015, someone proposed creating partnerships with local newspapers which could re-print or simultaneously publish portal content; however, to do so, more material would have to be written in regional languages. Mohan turned to the writing staff to ask who would feel comfortable writing an article in Hindi or another regional language occasionally? During the extended period of silence that followed, no one raised their hand. Even though everyone on the writing staff did their reporting in various local languages and many spoke a local language at home, no one felt comfortable writing – or typing – in any language other than English. While many disparaged the work of "copying," as the Hindi WaterWeb staff's disavowals of "cut-and-paste work" reflected, the work performed by the Hindi portal required both time and technical skill, and one which was not possessed by any of the English portal staff.

sharing only the same "WaterWeb" brand image at the top left corner of the page. For the Hindi portal, this was also often the only text on the homepage in English.

Supporting wholly independent operations across three different languages permitted WaterWeb to cater to different media worlds, practices, and literacies as they varied across languages. This approach was substantially different from how the national government addresses the same challenge of disseminating to a linguistically diverse constituency, which is to work through direct translation. As a representative of the central government's Department of Advertising and Visual Publicity told me during an interview, national media campaigns and other nationally disseminated information are simply translated from one language to another, though, in some cases, campaigns will be designed for a specific region and audience demographic in mind. For nationally disseminated messages, this means that the media, genre, and messaging are more or less the same across translations. While this model is not necessarily ideal – it cannot be customized to adapt to regional variations in culture, aesthetics, or education levels and much government communication is often left untranslated – the translation model of the national government, unlike WaterWeb, makes the same information available across nearly a dozen major languages to those who have access to the media channel it is broadcast through. However agile, WaterWeb's model upholds intellectual and communicative barriers that confine, for instance, coverage of particular development histories and associations to the English portal and select Hindi print media to Hindi Internet media. Further, the discrepancies in compensation between the three portals makes it so English-speaking end-users are the only audience group who receive thorough news and policy updates every week and highly mentored original reportage, because the English portal is the only one funded to support such work.

A Friendly Press Corps for and about NGOs

Over time, WaterWeb came to foster a highly particular model of information

dissemination that revolved around NGOs: WaterWeb saw its primary audience as coming

"from the [water] sector," and most of its content either featured or was sourced from similar

organizations (in many cases, both). Among WaterWeb managers, discussions of the portal

and its future strategies increasingly relied upon catering to what was often referred to as "the

[water] sector," who was considered to be WaterWeb's only known and consistent audience

group. Each one of these discussions, no matter how many promising new ideas they

generated, reinforced the imagination of WaterWeb, among its staff, as a portal primarily for

water non-profits and those they employed. Writers centralized NGOs for altogether different

reasons but especially because water non-profit organizations made manageable an

impossibly large reporting geography. Writers were also, especially from 2013 and onwards,

encouraged to cover those organizations that were funded by or partnered with its host

organization. While managerial staff politely called this "integration," many writers were

concerned about being used as a mouthpiece for WaterWeb's host organization and its

network. In these multiple ways, WaterWeb had become a kind of friendly press corps

designed to report on and to the private, non-profit contingents of India's water development

apparatus. It thus provided various trajectories of governmental sight to a privatized

administrative apparatus of development organizations and professionals.

Benefits

The work of WaterWeb surely produced many benefits, but those that I can account

for with this research (I did not conduct extended ethnography with end-users) occurred on

an individual or personal basis. WaterWeb seemed to directly benefit mostly educators and development representatives. While it was usually unclear how – and how much – WaterWeb benefitted its audiences, some end-user comments suggested that WaterWeb's English content periodically was translated to less-privileged audiences and, though more rarely, was mobilized in government documents and rights claims.   Compared to many end-user responses to the survey which emphasized the usefulness of the portal in staying up-to-date or writing reports on water issues, I saw much more salient benefits play out in the work lives of WaterWeb employees. (See Chapter 5 for a detailed discussion of such benefits as they have impacted one subset of employees in another organization.) At WaterWeb, both interns and employees could apply the experiences and affiliations they had acquired at wither the portal or its host organization, which often stood in front of a series of other impressive associations, to commence new career trajectories. One employee left WaterWeb to start her own non-profit organization. Another employee completed a post-graduate degree in environmental law while working for the portal. More than one employee was accepted to prestigious graduate programs in the fields of water policy or public administration after leaving the organization. The daily work at WaterWeb, too, offered substantial benefits to those who worked there. One staff member of the Hindi WaterWeb team, who had experience with both computer instruction and repair and composing (printing, layout, and transcription), found his job provided more substantial salary and benefits than others commensurate with his work experience. For him, the difference in salary was crucial, as he regularly sent money to support his family and also had to pay for debts associated with the unexpected demise of a past business. Furthermore, he said that he had come to also become genuinely interested in environmental justice since doing his work, and that, too, motivated

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him to continue working for the portal. Among the writers for the English version of WaterWeb, many found that their work enabled them to pursue more satisfying living arrangements. One employee, for instance, had, along with her husband, designed and built her own eco-friendly house in the foothills of the Himalayas. Writing for the portal enabled her to live in this peaceful, though remote, location. Another employee had discovered an unknown talent – filmmaking – while working for the portal. He not only conducted his filmmaking work with joy, but his position with WaterWeb helped him return to live with his family after previously working nearly 800 kilometers away. Other employees found that writing for the portal, unlike other jobs, had allowed them to continue to learn and think about water, a topic of deep interest. Though some of these benefits are quite substantial, they have been conferred on only a tiny group of people.

If the national knowledge portals were to be spaces for citizen inquiry and knowledge sharing and moderated by experts, one-stop shops for knowledge that could pull together all relevant information on a given topic, WaterWeb realized this, increasingly, as an archival or encyclopedic space first and a leisure magazine-like forum for expert discourse and human-interest stories second. Citizen participation never defined the platform and throughout the history of WaterWeb, the small presence of citizen interaction and participation that existed on the portal declined. These junctures between policy recommendations and the programs that resulted from them ultimately created wholly new or disparate entities than originally envisioned. This process occurred in repetition within WaterWeb but also within the other knowledge portals which arose from the recommendations of the National Knowledge Commission, all of which were drastically different from one another. Each pursued highly

divergent practices of qualifying, curating, and selecting information for public dissemination though each seemed to defer to distinctly modern paradigms for information (the encyclopedia or archive, the library, the natural history museum, the public school, and the salon).

One could understand the sizeable junctures that occurred across the lifespan of WaterWeb, the many moments in which the portal was reinterpreted and envisioned by a new staff member or consultant, as its own kind of democratic process. Indeed, as its own enterprise, WaterWeb featured numerous possibilities for citizen participation and deep engagement with contemporary water issues on a national stage; it was a media enterprise which offered a new venue to report on water, and people who had backgrounds in civil engineering, advertising, high tech, finance, and civil society participated in the discussions published on the platform. But these deep engagements, which had been envisioned for citizens across all of Indian society, were largely confined to the WaterWeb's own employees and their professional networks. WaterWeb was perhaps a democratization of information on a highly local scale (e.g. at WaterWeb itself; among a few individuals within its online community; among a number of development workers, students, educators, researchers, and hobbyists), but it was hardly an entity that curated, safeguarded, or created the appropriate space for the kinds of information which could support democracy itself. If anything, WaterWeb privileged English-speaking, non-profit development organizations throughout its endeavors, and beyond that, its audiences were made viewable only through the metrics and graphics supplied by Google Analytics. For an idealized informational democracy which WaterWeb was to help sculpt, large tech platforms and software played outsized roles: Small changes to Google's search algorithm caused WaterWeb to reinvent

both its content production and labor models, as if from scratch. WaterWeb managers also

continually imagined Wikipedia, though an extreme outlier for its type of site, to be an

exemplar which modeled a potential future (one with more citizen engagement) for the water

portal. Google Analytics, too, enabled managerial staff at WaterWeb to question and

ultimately devalue their own labors, for writing was not useful if it did not function to bring

in new "clicks" to the site. Perhaps this is what democracy and public service looks like

when a national program is managed through private philanthropy.

Taking these developments back to its origins, private arrangements such as those

that brought WaterWeb into existence were a central component of the type of statecraft that

the NKC pursued. In nearly all of the NKC committee's recommendations, programs and

new policy developments were to be overseen or managed by a private entity outside of the

government, usually a corporation or NGO, even though such junctures often led to programs

that highly diverged from one another and from the NKC's original policy suggestions. Such

junctures are, in some senses, productive, for they guarantee new flushes of participation in

media and, much more rarely, governance. The case of WaterWeb shows, however, that

these flushes of participation are wholly elite and, when put to scale against the size of

India's democracy, infinitesimally small.

When Tech Runs High but the Water Runs Out: Corporate power, hegemonic visuality, and a paradox of capitalism in Bangalore

In this chapter, I analyze the politics of two different development programs, which are, like the India Water Portal, privately funded and linked to a prestigious Bangalore-based IT firm. However, unlike the India Water Portal, which is funded by a private foundation and honors an abstract national mandate (abstract in the sense that it is a *virtual* website which focuses on information *about* water), here I discuss programs that could be characterized along rather opposite poles. Hardly abstract, these projects are based on ongoing and sometimes rather intense bouts of personal engagement with project participants, and they also involve direct claims, discussions, and, sometimes, modifications of physical spaces and territories. They are funded not by a foundation but, rather, an IT corporation, which I call Pearl, and are managed to varying degrees by a CSR unit internal to the company. Finally, though both development projects are considered national in their scope in various ways by those who have created and who continue to execute them, the projects depend on and produce hyperlocal geographies centered around, for instance, a specific road, neighborhood, or building. The two projects I discuss here are marquee programs within Pearl's CSR portfolio, though they hardly encompass all of the company's CSR enterprises. I focus on these two programs, because, when taken together, they tell an important story about how Pearl, with the help of an NGO which I call Avaani here, pursues governance outside of the traditional domains of the corporation and specifically through hegemonic and visual means.

On the tourism website, Karnataka.com, an article reads somewhat haltingly "Bangalore is famous for its elegant lakes and gardens as well as the magnificent IT Parks

that are now the lifeline of the city" (Raggi 2017). The article ignores Bangalore's history of disappearing lakes while placing IT parks, rather than water and trees, as its lifeline. Economically, many recognize the tech sector to be the principal industry of Bangalore though it only employs a negligible fraction of people (Radhakrishnan 2011; Dasgupta 2015; Heitzman 2004; Nisbett 2009) and the development of IT corridors has contributed to various maladies in the city, including the disappearance of its lakes and gardens. No matter what dominant development discourses may say about the economic heroism of the tech industry, it is water, and not IT, that remains the city's lifeline. This is a point well acknowledged in the philanthropy of tech companies themselves with many IT firms in Bangalore designing their CSR, Corporate Social Responsibility, to invest in water or environmental education at local and national scales.

Bangalore's principal aboveground water bodies – lakes – have been rapidly devoured by 20th century urban development, and its primary sources of water are located either deep underground or in rivers far outside of the city. While some residents of Bangalore receive a portion of their water from the municipal water board, many who live in newer developments of the rapidly growing metropolis, including elites and multinational corporations, must procure water on their own, as the state has not built water connections – nor can otherwise provision the vital element – there. Thus, to know water in Bangalore often means to confront its scarcity and search for moments of access to it. Here I discuss how tech philanthropists, at once positioned as visionaries for national development and city planning but also hardly immune to the water problems that plague the city, respond to the loss of water with a novel form of hegemony, one that is established with the active collaboration of an NGO (non-governmental organization) and experiments in visuality. These unfolding

dynamics raise timely questions for the field of political ecology. In the context of environmental crisis, what do corporations do within/to existing fields of power? What kind of power or authority is wielded by corporations and other private entities in increasingly liberalized governance regimes?

I address these questions in the context of Bangalore's urban peripheries where water is scarce and the municipal governance regime has not established water service. I analyze two CSR programs of Pearl, a Bangalore-based tech company, as they repurpose two key visual technologies – the map and the audit – to, in one project, structure a national education program and, in a second, restore the groundwater on which Pearl's headquarters depends. Drawing upon theoretical work on hegemony, governmentality, and visual culture, I show how an NGO and a multinational IT firm form a mutually beneficial relationship as they pursue the political authority required to manage the urban water crisis in which they find themselves. In the development programs they have devised to secure managerial powers, the institutions labor to build a salient hegemony among a local and national community alike, particularly using visual media, which they hope will result in material accumulations of water in Bangalore and elsewhere. Within these realms of ideas and practice, it is a small NGO, Avaani, who is able to calibrate development according to its values via the CSR of a large corporation.

This chapter is organized in three primary parts: First, I discuss how NGO consultants outside of Pearl came to co-manage the meanings of water and scarcity and the values embedded in Pearl's development projects. In the following two sections, I analyze how two development projects are pursued, demonstrating how Avaani and Pearl's uses of visual media not only prompt people to reframe water as they draw themselves into a visual

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relationship with groundwater, a usually invisible resource, but also to establish a broader hegemonic and managerial power. To conclude, I discuss how ecological crisis and the strategic labor of an NGO combine to soften corporate power in its creation of simultaneously hegemonic and liberatory development programs.

Conditions: Water in Southeastern Bangalore's rapidly changing urban periphery

Several forms and fixtures characterize water in Bangalore: lakes, groundwater, water tankers, borewells, and rainwater harvesting structures. Each tells a story of disappearing water in the city. Though nearly 300 large lakes were built over several centuries into Bangalore's landscape as a complex of irrigation structures and long-term water storage, today, most of Bangalore's lakes are considered lost to rapid urban development that, starting in the 1960s transformed 79% of Bangalore's water surfaces into urban structures such as stadiums, residential complexes, and bus stands. The lakes that remain have become highly encroached upon, polluted, and 66% of them are fed primarily by sewage (ENVIS 2012; Balachandra and Reddy 2016). Without lakes to absorb the roughly 900 mm of rain that Bangalore receives in two monsoon seasons each year, the city's water needs are met by ever-contested sources: the Kaveri and Arkavati Rivers and a largely unregulated market of groundwater extraction. The Arkavati (18-26 km away) and Kaveri (86 km away) rivers respectively comprise 20% and 80% of the city's river-sourced water supply. Private water tankers are ubiquitous throughout the city and deliver groundwater to a greater share of residents than the public municipal services are able to (Bangalore Urban Metabolism Project 2016). Many of those who can afford to install their own borewell for water say that they must dig down more than a kilometer before any water is reached.

So far, I have recounted merely a story about an ever-disappearing element, one vital to life and livelihood, in the South Indian city. When one considers the size of Bangalore, 8.5 million as counted in the last census in 2011, and its rate of growth, roughly doubling in size nearly every ten years since the 1970s and at far greater rate of speed than all other Indian metropolises except for Delhi (District Census Handbook: Bangalore 2011), the situation appears more dire. The recent growth of the IT sector and its aspirational position as the driver of India's previously unimagined and well-savored 7-11% GDP rate is deeply implicated in the city's expansion and patterns of urban development. Contestation over Bangalore's principal water source, the Kaveri, often manifests politically as a struggle between the states of Tamil Nadu and Karnataka, but it is the growing water demands in the areas of Bangalore reserved for tech sector growth which often drive Karnataka's position (ever asking for greater water allotments) in the conflict. Contestation over Kaveri water has led to high political tensions, city-wide strikes, or *bandh*, and violence in recent years. Sarjapur Road is one terrain in which these forces of rapid urban growth and increasing water scarcity combine for highly uncertain futures.

Sarjapur Road is lined with the spacious gated campuses of IT companies and high-rise apartment complexes in an area of southeastern Bangalore that is conveniently sandwiched between Whitefield and Electronic City, two other IT clusters in the city. It is an area that is so heavily congested with traffic that autorickshaw drivers often refuse to take clientele traveling in that direction (as I frequently experienced while doing this research). During most of the 20th century, however, this area was nestled well into the countryside, including the sleepy but prosperous Bellandur, where Pearl's headquarters is currently

located. In those days, Bellandur was an agrarian community that hosted an active silk and muslin industry.

Things began changing along Sarjapur Road when Bangalore's high technology sector started to take off. In 2000, the Karnataka state government identified Sarjapur Road as a new site for an IT corridor. The plan materialized officials' literal inspirations to make Bangalore like Singapore and Silicon Valley (Heitzman 2004), and it soon set off a flurry of real estate prospecting. Within five years, residents of Bellandur reported seeing groundbreaking ceremonies for new IT firms every week (Iype 2005), and Bellandur's population more than tripled between the 2001 and 2011 censuses. Somewhat ironically, Bellandur, which had been known as the first *panchayat* (local, village-level government) to practice "e-governance" for its early move to computerize village records and processes in the 1990s (Beary 2002; Srivatsa 2010; Mazzarella 2010), was soon subsumed – spatially and politically – by growing tech firms: Within just a few years, much of Bellandur's land had been purchased for tech-related developments. Sometimes these land acquisitions occurred through questionable transactions, as when the state government sold land normally reserved for grazing at rates significantly lower than market value. These changes in land use and property acquisition pushed many villagers to abandon livestock, land, and other agricultural assets, leaving many without a stable vocation (Iype 2005). The subsumption of the village occurred politically as well, for in 2007, Bellandur, along with 109 other villages on Bangalore's outskirts, was folded into Bangalore's municipal governance regime as the Greater Bangalore Metropolitan Area or, for short, "Greater Bangalore."

But, Greater Bangalore was not given connections to the city's larger water infrastructure nor did the municipal government have water to supply these newly

incorporated areas, infrastructure or not, so Bellandur and Sarjapur Road, areas of acute and unregulated groundwater depletion, were left out of key components of municipal governance. Bellandur happens to be home to Bellandur Lake, one of the largest lakes in the region and one of the few that has survived decades of urban encroachment. But the lake does little to relieve the area's water woes. Bellandur Lake used to provide ample water to the village for irrigation, but it is now better known for spewing copious amounts of strange foam over nearby roadways and for periodically catching on fire from severe water pollution. Within a city whose groundwater is already severely depleted, the water scarcity in Sarjapur is among the most acute in the city.

It is important to highlight the concomitant roles played by both the state and actors within the tech sector in the formation of the urban and environmental crises developing in Southeastern Bangalore. The state government, eager to position Karnataka as the "Silicon State of India" and Bangalore as the "IT Capital of India" in a newly economically liberalized India, highly privileged the priorities of the emerging tech sector in various planning exercises. In 1999, it established the Bangalore Agenda Task Force to identify the urban planning priorities for the city and set representatives of tech corporations – but none of Bangalore's older corporate houses nor even public officials – at its helm (Nair 2000). In its construction of Karnataka's unique "Karnataka State Information Technology Policy," passed in 1997, the state government invited representatives of high technology firms based in Bangalore not only to suggest details of the policy but also to occupy positions of ongoing oversight as the law was implemented (Heitzman 2004). The policy reserved an array of exemptions (e.g. from power cuts, pollution control regulations, tariffs and taxation) and land acquisition paradigms for high technology industries. Soon, the national government

followed Karnataka's lead and instituted its National Informatics Policy, which specifically identified "the rural hinterlands adjacent to suitable cities" as ideal locations for high-tech companies to "flourish." Bangalore was listed explicitly as a target for the development of such "Hi-tech habitats" (Government of India 1998 via Heitzman 2004: 204). Thus, the state yielded itself to corporate power, particularly big tech corporate power, and the rapid and unfettered development of Bellandur as a center for high technology was legitimated throughout the highest levels of government.

Tech companies in and outside Bangalore, relying on their reputed contribution to "new India's" prowess in the global economy, continue to prospect for land in peri-urban areas where governmental informality may procure inexpensive real estate prices but where there are often already water shortages. In her ethnography of Indian tech sector giant Infosys, Simanti Dasgupta (2015) notes that though water and electricity supply are problematic for most in Bangalore, tech companies never seem to suffer from such shortages. Even in areas where acute water shortage persists, IT enclaves seem to always get what they need while others are left wondering how.

The array of serious water problems to solve in Bangalore, let alone the entire subcontinent, is staggering: water pollution, groundwater depletion, sewage treatment, transboundary water conflicts. Many of these issues demand new or modified infrastructures and institutional arrangements, litigation, or immediate and substantial policy changes. However, many development programs that I studied chose to respond to the significant problems of water with *acts of visualization* rather than new infrastructure, policy advocacy, or litigation. These visualizations, discussed in greater detail throughout the dissertation, take

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the form of online magazines or information portals, maps, films and homemade videos, photo essays, sanitation museums or technology demonstrations.

Bringing water into the visible field and searching for moments of exposure to it in some ways characterizes urban life in the water-scarce city of Bangalore. Consider the Tigalas, a caste community of urban gardeners whose livelihood practices have been shunted by Bangalore's rapid growth and demolition of water resources. Each year, during their celebration of the mythical visit of Draupadi to her soldiers, the Virakumaras, from whom the Tigalas trace their descendance, ritual participants observe a *jatre* (procession) which, apart from religious meanings, retraces locations where they *used* to access water in the city but where those same sources have since been polluted or encroached (Srinivas 2001). The *jatre* preserves the memory of water even as the vital substance disappears or becomes materially corrupted by urban development.

The disappearance of water in Bangalore has also driven a lake restoration movement. Comprised of self-organized civic organizations, the movement frequently draws residents to city lakes with tours and educational festivals in order to keep the lakes present in people's minds. While the lake restoration movement has accomplished several notable feats (e.g. the restoration of Kaikondrahalli Lake), these activities are marked by their own complicated politics, as they tend to privilege middle- and upper-class rights to water and desires for recreation above the water cultures and rights of others, even those which heavily defined the lakes' past. Nonetheless, lake restoration has become, in many circles, inseparable from the idea of Bangalore itself.

Like the procession of the Tigalas and lake restoration efforts of residential groups, Pearl's response to water scarcity in Bangalore also takes acutely visual forms – maps and

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audits. But, why approach a development and ecological crisis with visualization? The use of media such as maps and audits in development gesture to a long and problematic history in which they have been actively used as instruments of social control and manipulation by states (Scott 1998; Krishna 1994) and other entities (Ferguson 2005; Li 2005; Voyles 2015). They are distinctly governmental technologies, utilized to uphold many shades of political process and domin[at]ion, from democratic to brutal authoritarian regimes. However, the answer, in this case, also lies in a highly particular commitment to both visual media and the kind of social change observed by Pearl's CSR programs; what Nicholas Mirzoeff calls visuality – a mode of imagining and perceiving that is available to only a few authoritative agents who can, using a special sight, sculpt the course of history (2011). I argue that Pearl's two programs, their national sustainability education program and groundwater mapping project, depend not only on the governmental powers contained in visualization (Scott 1998) and visuality (Mirzoeff 2011), but also that the arcs of governmental power enabled by the visual are influenced by consultants from the non-profit group outside of the corporation, Avaani.

This chapter contributes to key theories about visualizing technologies of governance, as well as the nature of political authority wielded by corporations and NGOs in the context of acute environmental crisis: Answering calls to study governing entities outside or in complicated relationship to the state, I focus my analysis on the ways a tech corporation draws upon visibilizing technologies for the potential governmental effects embedded in them, an ongoing process that largely does not involve offices or officials of the state. Affirming that development policies and goals are formed and enacted by a wide range of brokers and processes (Crewe and Harrison 1998; Mosse 2011; Lewis and Mosse 2006; Li

2007; Fechter and Hindman 2011; Gupta 2012), I discuss the ways in which consultants outside of a corporation both influence the larger goals of Pearl's CSR programming and structure its interface with various publics, responding to calls to examine the ways bureaucrats texturize or alter the larger development projects they are tasked with serving (Herzfeld 2005; Mosse 2011). Because the development projects I discuss are instances in which we see corporate power creeping outside of its customary bounds – of workplace, product, advertisement, extraction, and supply chain – to influence schools around the country and residents and business near its campuses, we are thrown into the thick hedges of hegemony. Pearl does not assume an authoritarian or even firmly legitimate position of power as it could with its own workforce. It also needs not only to impact a natural resource but, to do so, manipulate the behavior of many people. Thus, Pearl relies upon tactics of hegemony and the friendly guises it permits them to assume. I thus contribute to existing discussions by analyzing softer and cloudier relations of power than the stark hierarchies and injustices some have focused on (Scott 1998; Schuller 2007; Voyles 2015; Mirzoeff 2011).

The basic formula of James Scott's theorization, which has widely shaped subsequent work in political anthropology and related fields, is that nation-state powers have utilized a range of visualizing technologies and techniques (e.g. censuses, maps, audits, infrastructure plans, etc.) to, first, make legible and, then, to control natural and human beings and processes within a territorial realm over which they (states) claim dominion. These are efforts of high modernism, an ideology that places utmost faith in technocratic definitions and pursuits of progress. Technologies of legibility can have an array of impacts, malign and beneficent, and be put to many uses, such as fulfilling essential government functions, as imagined by 18th century ideas about a state that improves the welfare of its subjects. Scott

makes mention, too, of highly brutal regimes of totalitarianism and violence, such as the

Third Reich, which made use of otherwise benign censuses and maps to identify the citizens

who would be subject to mass subjugation, confinement, deportation, and, ultimately,

execution, but, as he reminds, it is the values brought to the map that direct its ultimate

political impacts, as the same map, referring to an Amsterdam city map called "The

Distribution of Jews in the Municipality," "could as easily have been deployed to feed the

Jews as deport them" (Scott 1998:78-9). The governance arrangements that Scott more so

focuses on are those that enact ultimately harmful schemes of structural "improvement" or

"development," such as those which "rationalized" land tenure (Scott 1998:11-52) and

thereby dismantled many forms of shared or customary land uses as well as local specialized

knowledge of environment and agriculture. Unrealistic and deeply disruptive, such schemes

to improve the human condition have functioned with complete disregard of local

knowledge. They have operated foremost on processes of simplifying that which is to be

governed, whether human or environmental, to the point where even those occupying the

lowest levels of state bureaucracy could look at legers or maps and make decisions if needed.

According to Scott, the scenarios that produce the most harmful outcomes are when

standardization or legibility campaigns combine with authoritarianism and high modernist

ideology.

I find Scott's formulation of a coercive and unidirectional governmentality based on

technologies of legibility more suitable for understanding Pearl's CSR than the more hopeful

politics of what Arjun Appadurai has termed "deep democracy" in which globalization and

liberalization make way for unexpectedly just and participatory civil society alliances

(Appadurai 2001). For coercion and power imbalances mark the dynamics of Pearl's CSR

even if unusual alliances are present as well. The maps generated by Pearl and Avaani, though records of highly localized knowledge, bear little resemblance to the almost anti-cartographic, thoroughly human reservoirs of water infrastructure knowledge that have been depicted in recent ethnographies of water in Mumbai (Björkman 2015; Anand 2017).

The paradigm is not without issues. Since the 1998 publication of *Seeing Like a State*, other scholars have called for improvements to the initial theory and further developed it in their ethnographic research. Many have called for deeper ethnography to assess the relevance of Scott's theory, so conveniently schematic and simplifying in itself (see the 2005 special edition of *American Anthropologist*, for instance). Initial review exercises and even deeper ethnographic work has productively expanded Scott's initial theoretical formula by accounting for other entities that govern (or attempt to), such as corporations, non-profits and NGOs, and scientists (Ferguson 2005; Li 2005; Schuller 2007; Schept 2014; Broome and Seabrooke 2012; Vetterlein 2012), and by going beyond the set of binary relationships – state-society, society-nature, power-resistance – assumed by Scott (Li 2005). Michael Herzfeld has emphasized that Scott (1998), and the discussions he spawned, often did not adequately account for the fact that states are hardly homogenous entities nor that their policies are instituted without interruption or modification (points importantly raised by many, such as Abrams 1988 and Gupta 1995). Herzfeld therefore has called for more work which explores how the decisions and cultures of bureaucrats (or, to be more general, agents who institute policies), and how their relationships with those ranked above them influence the governmental processes of legibility and control. As Tania Murray Li notes, Scott's mystification of local knowledge is also problematic, for knowledge, however local, contains

and further constructs its own set of power relationships and can work along with or be mobilized to extend state interests or that of oppressive regimes (2005).

States and other institutions which articulate themselves as political authorities do not traffic in images just to make legible that which is governable. Images are also an important affective currency by which states and other authorities try to control the narratives and subjective experiences of legitimization, thereby consolidating political power and its particular tenors (Roy 2007). The visual has thus long played a fundamental part in constituting political authority, for visual-symbolic repertoires lend energy which can animate a particular political move or event (Mazzarella 2017). Indeed, far from being merely representative or reflective of the political, discourse, visual or otherwise, is one material by which politics are forged. As Srirupa Roy asserts, in her analysis of the enduring nature of Indian nationalism and the nation-state: "Discourses *about* the nation-state are constitutive *of* the nation-state" and go on to impact lives and bodies in significant ways (2007: 17). Maps again play an important role here, for they, as depictions of "imagined communities" which are political and often sovereign, are frequently declarations or at least imaginations of a political form imprinted in space (Anderson 1983). In this paper, I draw upon these literatures to show how Pearl and Avaani utilize images both (1) to render human and environmental subjects legible and thus governable – thereby pursuing a totalizing and visual directive towards an imagined future (Mirzoeff 2011) – and (2) to perform their authority as friendly, responsible, and cooperative so as to better manufacture consent.

Consent of a corporation: Avaani's values, adopted and amplified

Pearl rarely makes public its ultimate motivations as a corporation, but its repetition of one task, a water audit, suggest that particular tactics guide its claims to power. In its national sustainability program for schools, for instance, Pearl's CSR team has made substantial changes to the project every year, though at the heart is always one exercise: a water audit for which students must map the sources, pathways, and uses of water in their schools and calculate the total water used per person. I found that the water audit was not merely a pedagogical instrument applied in Pearl's national education program but that it also is a residue of Pearl's experience with the second contradiction of capitalism (O'Connor 1988), or the ecological limitation of capital's expansion. When one of Pearl's campuses literally ran out of water and was forced to shut down for several days, Pearl hired a team of consultants to reassess its water use.

What followed was a water audit, conducted by an environmental consultation group, Avaani. The organization had likely been approached by Pearl, as some of its team conjectured, because the group was well-known in Bangalore for their work on rainwater harvesting and also for their creative approaches to water conservation and urban sustainability. Avaani's group is small and agile – comprising only a few people who spend much of their time going between various locations in the city while working on active projects and conducting meetings with those associated with them. They include environmental scientists and ex-tech workers, who, together, can (and often did) speak many of the languages used in Bangalore: Kannada, Telugu, Marathi, Tamil, Hindi. The organization is registered as a non-profit organization, but it is a dual-enterprise, paired with a small, conservation-oriented architectural design firm of the same name (the result of a

merger between a husband and wife and their past enterprises). Though its architectural work and non-profit activities (education, water conservation and planning, water policy advocacy) are largely separate, the two Avaanis share unified commitments to achieving ecological sustainability in discrete urban conglomerations (e.g. single homes, corporate campuses, residential layouts) within Bangalore. Avaani's organizational structure – and the linguistic and occupational diversity of its composition – help the non-profit portion of the enterprise to negotiate various realms of development capital in Bangalore (from, for instance, private corporate consultation work to CSR or from proposing ecologically minded home design to retrofitting schools with rainwater harvesting structures). Certainly not averse to working with institutions and individuals whose wealth is intricately connected to the city's ecological degradation, Avaani, especially its founder and higher ranked personnel, instead seemed to actively pursue work that would allow them to resolve the fundamental contradictions between ecology and capital as they play out within Bangalore. In this way, the group operated not in opposition to economic liberalization and its logics but rather as a force that could make it ecologically sound. It was in this spirit that Avaani conducted its water audit of Pearl.

The audit became the means by which the corporation began to see water beyond the incrementalist performances of reducing per capita water consumption they have long claimed in annual sustainability reports. The water audit brought into sight the enormity of the company's consumption in reference to the severe limitations of the liquid's supply in the surrounding, rapidly developing Sarjapur area where the municipal government has made no commitment to water service. This scenario of unregulated, private water delivery is similar to about 50% of the arrangements for Pearl's campuses nationwide.

Pearl's water audit is important for several reasons: Though first jerked into sight through a debilitating confrontation with water conflict and scarcity, it was the framework of accounting which instilled water – and Pearl's subsequent geographical claims to it – with a longer legibility to the corporation. But, that legibility was importantly mediated by Avaani: Fully recognizing the audit as a highly convincing and widely accepted rhetorical form capable of social manipulation (Strathern 2000), Avaani conducted the audit according to a carefully crafted communications strategy which effectively shifted Pearl's perceptions of water, their responsibility to it, and the geographical bounds of that responsibility. Pearl's CSR team was so enthused by the power of the water audit to reframe water demand and use that they enlisted the water audit, as well as Avaani's mediation of it, as the core feature of two CSR programs. This dynamic shows how governmental technologies are not merely leveraged from high above to control those with less power, but they also can be deployed by smaller actors to deeply influence powerful institutions.

A question

Avaani staff members frequently cited the audit as commencing with Pearl's interest in learning to become responsible in their water use. Devesh, one Avaani staff member, explained it to me as we drove to a meeting related to Pearl's groundwater mapping project, "They [Pearl] came and asked us the question. They said, 'Listen, we want to be responsible in our water use, we don't know what that means, tell us what that means.' They were very, very open to our responses. You must give credit to Pearl's proactiveness" (interview with author, July 2015). This version of events positions the water audit as merely the answer to a well-meaning corporation asking an existential question about water responsibility, a story that was echoed throughout Avaani and at moments of public presentation about its CSR.

However, at other moments, another word emerges: self-sufficiency, a term silently mindful of environmental limitations to corporate growth and a term which is much more suggestive of Pearl's ultimate interests.

The water scarcity that stopped operations at Pearl (and other nearby IT companies) was not merely an ecological shortage of water, as it was framed in my discussions with the staffs of Pearl and its partners. It was actually a crisis brought about by a class of actors, water tanker drivers, who refused to deliver water to the IT corridor for several days because of growing tensions among farmers in the areas where the water is harvested outside of the city, which were exacerbated by the growing water demands and purchasing power of mega-consumer IT companies. This dynamic repeats itself, as news cycles indicate. In seeking a water audit, Pearl was not merely looking to become more responsible or to make a breakthrough in corporate resource efficiency. Rather, they were seeking to circumvent a labor market that sporadically refuses to serve them. The question Pearl sought to answer in its initial water audit and which it is still seeking to answer in its subsequent mapping project is not "How can we be more responsible with water? What does responsibility mean?" but "How can we become independent of private water sources controlled by other people (i.e. water tankers)?" It is this question that reveals Pearl's guiding values as they seek managerial power over water.

A brief statement made by M. S. Iyer, a senior CSR manager at Pearl, at the first annual summit, a public event, to present one of its CSR programs, is revealing:

> [Based on the corporation's long-standing work to reduce their consumption of environmental resources,] water recycling has happened, conservation has happened, and various steps to continuously improve the water footprint so to say have happened. But, a few years back, what we realized is, this is, while we ourselves try to be more efficient, in a larger context, is that sufficient or not? The answer very clearly was coming out as no. Particularly so for water,

which is a public, community resource, and it is a fluid resource. And, we realized that long-term sufficiency, it needs to go beyond that. There is a need to look beyond the boundary of the form an organization takes. From a very narrow organizational perspective, it can pose a risk. It can pose a risk to the very operations of a company, like many IT companies realized 3, 4, 5 years back, in the IT corridor in Chennai, where we had to shut down for 2 days because of groundwater. So even from a very narrow point, but from a broader perspective, there was an imperative for us to look at the bigger picture of where are we situated, as far as groundwater is concerned?, what are the interlinkages?, where does water come from?, what happens to it?, who are the competent stakeholders? And, therefore, what is the appropriate way for us to respond? There may not be just a conventional, earlier corporate risk body, it must have a much more broader base, including inclusion of our stakeholders. And that was how this project began, about four years back. It started with Avaani looking at the campus in Sarjapur and Chennai and seeing what are the potentials for us to be self-sufficient without depending on external sources?

In his recounting of events, Iyer does little to hide the reasons behind the corporation's sudden new interest in self-organized, community-based governance and comparatively aggressive attempt to restore groundwater. Avaani was seeking to limit corporate risk, admittedly from a "narrow organizational perspective," and, as termed in other interviews with Pearl, to promote "continuity of operations." These statements make clear not only that, upon experiencing a debilitating water crisis, Pearl intended to enter into a deeper managerial, controlling relationship to water that could lead to independence from private, external sources, as indicated by its initial question to Avaani. They also show the extent to which Pearl permitted another group of actors outside of the corporation to structure their perception of the situation and subsequent course of action.

An audit

What followed Pearl's initial line of questioning was a water audit and a responsibility framework, each mediated by Avaani. Due to company secrecy surrounding

resource uses and vulnerabilities, these histories are largely unavailable beyond the few

people who partook in them. However, it is clear that the water audit and the communication

process that accompanied it were productive of several ideas for Pearl, as indicated by

statements such as the one above. First, Avaani's water audit produced a sense of needing to

go "beyond the fence" of the corporation. As one of India's most successful tech companies,

Pearl has enormous resources they can invest in retrofitting their campuses with water-saving

technologies, and most of their campuses do have extensive rainwater harvesting and water

recycling programs. A new campus, for instance, has installed rainwater storage tanks

underneath the floors of its buildings, matching the large surface area of its massive

compounds with equal capacity for water storage. Yet, as the audit seemed to suggest, such

measures could not fully sever the company's ties to the unstable labor market through which

they procure water nor achieve the self-sufficiency described by Iyer.

However, beyond simply revealing that Pearl could not become water independent

through campus management strategies, I propose that the audit reframed water in a larger

sense for the company. In my ethnographic notes and recordings with Pearl and Avaani, I

notice that there is a set of claims about water reproduced almost verbatim by those

throughout the project – namely that no matter the amount of water conservation one does,

groundwater is a community resource and must be managed as such. To take groundwater as

if one owns it ultimately deprives others in the larger water community. For Ramesh, of

Pearl's CSR team, he put it this way:

> So it clearly was a thing that when you are trying to look at water
> management, you cannot restrict yourself to work just within the fence. You
> may do a lot of environment management, you may do a lot of recycling, you
> may do a lot of reducing the flow or the footprint of the campus, but your
> source is from the community. At the end, your groundwater is shared by the
> community. So, because it's a shared resource, nobody exerts a right over the

resource. If I'm actually having a borewell in my own campus, the aquifer is shared across the area. That's the reason why we said we have to go beyond the fence. We can't just do a within the fence management program, so we said, how should we do it? It has to be participatory, it has to be community-centered. Groundwater is a community resource, so it has to be community centered (interview with author, November 2014).

Or, in the words of Avaani's co-founder at the public summit in June 2015, "You can do all of the rainwater harvesting you want, you can do all of the [water] recycling you want, but if you're dependent on groundwater and tanker water, it is perhaps depriving others, villagers, of a water source, to some extent." This discourse establishes several semantic commitments within Pearl's CSR team, as mediated by Avaani using an audit: water conservation does not go far enough, and going "outside of the fence" is an imperative for the company. This discourse also makes two additional concessions: Groundwater is a community resource and, as such, cannot be owned or subject to formal claims of entitlement.

While I have no evidence of how Pearl came to establish this discourse and its semantic commitments, it was the water audit conducted by Avaani that seems to have generated this shift. Multiple CSR managers either immediately preface or follow their description of the water audit with variations of this statement, and, based on presentations and papers disseminated by Avaani, the group had been making similar statements before their first encounter with Pearl. As an organization that had specialized in water conservation technologies such as rainwater harvesting and wastewater recycling, Avaani had run into the limitation presented by technologies retrofitted to single structures. Radhika, a project leader at Avaani, articulated to me that water-saving technologies are necessary but need to be part of a broader communications strategy to amplify their effects on groundwater depletion:

> We have group that does rainwater harvesting on the ground. Let's say, at the basic building block level, that's what we do. We go to places, we understand what water issues there are, we design and implement rainwater harvesting
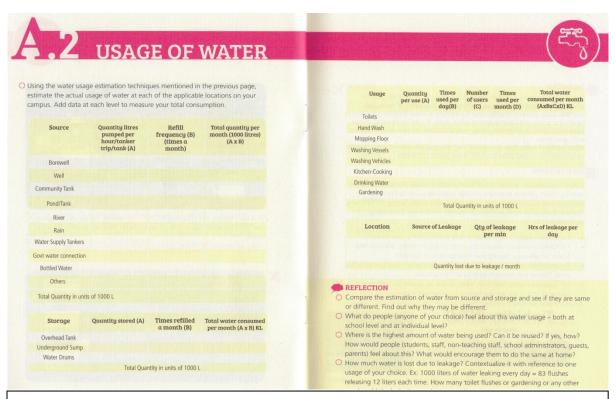
systems. And, as we started doing more of that, we somewhere realized that maybe just doing that is not enough…Of course you have to reduce your water consumption, you have to harvest your rainwater, you have to treat and reuse your wastewater…It's just the logical solution. So now that requires for you to communicate it to a larger audience" (interview with author, July 2015).

Pearl's question – "what are the potentials for us to be self-sufficient without depending on external sources?" – was a timely opportunity to expand beyond installing water-saving technologies for a small group of interested people to spreading the message to a larger audience.

Having worked in Bangalore and the Sarjapur Road area on water conservation for several years, Avaani was also in a good position to suggest to Pearl what "beyond the fence" might look like. They had established relationships with many nearby residences, and, according to Devesh, a community groundwater mapping project had actually been conceived years before along with another partner organization. However, with several proposals left unfunded, the project was left for some time as only a set of ideas and intentions. It took Pearl's abrupt experience with water scarcity and a question about self-sufficiency for the project to materialize. Pearl, of course, was not looking for an "outside of the fence" project but, merely, a water audit. However, as Avaani conducted it, the audit was a key part of a carefully crafted communications strategy in which they retuned managerial rhetorical forms, such as the audit and the responsibility framework, to effectively calibrate their audience's perceptions of water and their responsibility to it. In the case of Pearl, Avaani's tactics worked effectively to produce a need for a project they had long envisioned while simultaneously remaining in line with Pearl's vision of becoming independent of "private, external" sources of water.

Consent of the schools: Circulating visuality (and the "IT narrative")

Once complete for two IT campuses, Pearl began to re-structure multiple CSR programs according to the water audit, thus proliferating the exercise, on one hand, as a rhetorical form productive of specific meanings about water and, on the other, as a means to influence the people who were subjected to it. Pearl soon designated the water audit as the basis for its annual sustainability education program with over 500 schools in India, which is managed almost entirely within Pearl's CSR department. Held annually, the program enlists students from class 4 and above to complete a school project on water. Some student groups, based on the quality of their submissions, are treated to an awards weekend, during which they are flown to Bangalore, are given environmental tours of the city and the IT campus, and present their school projects to one another. The teachers and schools selected for awards continue to be engaged with Pearl for three years through nature retreats, school visits, and other educational events. These relationships are curated by Pearl to achieve their objective to integrate a permanent environmental sustainability module into each school's curriculum. For Pearl to center the water audit in their national educational program highlights not only the great value the audit held for Pearl internally but also in their ideas about national education. Here, again, Pearl and Avaani jointly manage the audit's meaning.

Image 1. In Pearl's education program, students compile a thorough ledger of how much water is used in their school (in liters and Rupees).

The instructional materials for the annual school project (Images 1 and 2), available in English and Hindi, lead students and teachers through a highly technical accounting of water on their school's campus: What are its sources? Is there rainwater harvesting? How much water is used across the campus and for what purposes? In addition to the water accounting, students must also complete two elective exercises, which are hands-on activities designed to give students practical skills for measuring, purifying, or saving and recycling water. Finally, students must complete a series of essays for a final section of the project entitled "Opening the World of Water," which asks students to consider water in terms of all social, livelihood, and business sectors of human activity. Non-human entities and beings are considered, as is use on a global scale and over historical trajectories and how water impacts and is impacted by inequality and social stratification. To complete the project, students must

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call upon a large array of perspectives and calculations in service of a total, synthesized view

of the water system in their school, which they then are instructed to use to visualize and

chart a pathway toward potential futures. The assignment is essentially to develop the skill of

visuality within the topical realm of water.

Image 2. The instructional example of a school map provided in the project manual.

In addition to required components, students are encouraged to be creative in their

submissions and to include additional material so long as it is relevant to water. Student

submissions turn out to be fifty to one hundred pages of material that is almost all highly

specified by the project activity guide. As they amass information about water in and around

their school and generate a series of documents for their final project submission, students

learn two fundamental aspects of visuality: (1) a synthesis of a wide variety of information

into a totalitizing whole that (2) can be acted upon to influence the historical trajectory of the

larger social and material world.

Structured as a series of largely visual requests, the school project goes well beyond the process of mere research. The assignment repeatedly asks students to produce visualizations such as maps, drawings, labels, accounting ledgers and to use the sight that results to see, identify, and witness water and the human elements which impact its flow, quality, and level. There is a persistence toward the total in the project requirements: a representation of the entire water system of the school in the form of a map; a ledger that calculates the total amount of water used and lost to leakage in the water audit section; several essays that synthesize project information to make a total assessment of the school's water system; and ultimately the overall role of water in society and ecology. By setting the object of analysis to be the campus rather than the school, the project implicitly encourages an understanding of water that is grounded in a consideration of environment in which humans are but one aspect. These are not only mechanisms by which students simply re-see water within the frames designated by Pearl's educational materials (e.g. water should be conserved), but also tools with which students start to suggest proper states of water sustainability and tactics for its management for the future. With its persistent pursuit of total descriptions and emphasis on the visual, Pearl's educational assignment makes clear that transformations in one's relationship to water, and through its mass dissemination of the project, a nation's relationship to water, are best made by invoking the visual.

But the visual, here, includes not only what is seen, but also what is imagined. To pair with the highly visual components of the project, students are further asked to apply what they have learned to larger contexts: larger geographies, all components of human life, the larger ecological system. The assignment continually asks students to re-see their schools and neighborhoods anew, as when students are asked to calculate the potential amount of rainfall

Image 3. Students show the school map they've created for Pearl's assignment.

that can be harvested from the school's rooftops and, then, to design a rainwater harvesting system. The project thus culminates in a series of imaginative requests for students to re-see the future of their water system and, sometimes, to chart how they might get there.

The student projects reflect the influence of Avaani, Pearl's consultant group. According to Radhika, a project manager at Avaani, Pearl had initially designed the project prompt independently based on their memory of the company's water audit. However, because that memory was incomplete – or because the values embedded in the audit were

never fully integrated by Pearl – Avaani ultimately came to write the activity guide and accompanying resource book for Pearl's educational program. Given the joint management of the project's design between Pearl and Avaani, the assignment reflects, first, the importance to Pearl of the water audit as a formal, *national* education task and, second, Avaani's aspirations for the semantic outcomes of the audit exercise.

Through designing the education project as an award-granting program where students compete to compile the best assignments, Pearl and Avaani establish a hegemonic order of meaning that is sustained by visual images and exercises. The meanings that pervade among participants during award weekend events are that water should be conserved through volunteerism, thriftiness, and water-saving technologies and also that water should be valued in both its ascribed meaning and through frequent acts of enumeration. These meanings are upheld during the awards weekend when students present their final projects: Most student groups design large and visually elaborate displays that post phrases about saving water, photographs from lake clean-up events or the water-saving technologies they have installed in their school, and visualizations of their audit. Students, further, consistently discipline their speech to fit the frames established by the project. For instance, during an hour-long "conversation with Pearl's CEO," students ask questions which retain the assumptions of the project – water should be conserved; people should be made aware of wasteful water use and adopt conservation measures; students themselves should spread messages of water conservation; and, interestingly, that Pearl is an exemplary force for water conservation and development in the nation. Out of over 25 questions asked by students, not one problematized or critiqued Pearl's position in the larger political economy of water use as a large company that makes enormous demands on water even in locations of scarcity. Many

students even directly positioned Pearl as an institution that could implement development policies and programs in their region or state. Only one teacher was permitted to speak during this part of the program. Positioned at the very end of the session and only given ten seconds to speak, she stood up and lauded the corporation, saying to the auditorium of about 400 people, "I want to congratulate on behalf of everyone that Pearl is showing light to the society. You have become a lighthouse to society, because what you have initiated will be spread to millions and millions. And you have done the right thing by catching them when they're young, because when they go back to their schools, they're going to be educating many more students." The natural order that Pearl establishes here not only produces ideas about water conservation, but also about the friendliness, proactivity, and moral goodness of the corporation more generally within society – and its right to redirect the education of children.

Consent of the community: Visuality as a hegemonic process

The water audit also became the basis for a newer, Bangalore-based project: a community groundwater mapping exercise in the area of the city that surrounds a Pearl IT campus. The project attempts to visualize the borewell monitoring data and its seasonal fluctuations with maps (Figures 4-6) to better understand the aquifer as a water-provisioning resource. In its stated purpose of visualizing the daily and seasonal fluctuations of groundwater, the map is much like the water audit in Pearl's education program. Volunteers from the area's businesses and residences measure their borewell water everyday, thus mapping the sources and current levels of water, as well as the amount of water used. Pearl and its partners seek to acquire a sense of groundwater availability, as well as how quickly

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the aquifer's water levels respond to rainfall events and various conservation measures. As the aquifer is the primary water source for many in the area but is being depleted at a rapid rate, the project promises, through its managerial approach, to create certainty in an area of Bangalore with a highly uncertain ecology for sustained human settlement. Pearl's groundwater mapping, however, does not just retrofit the aquifer with a set of managerial lenses and practices, it is also a highly social exercise that slowly brings together residents and institutions who discuss their water uses, troubleshoot and initiate water conservation efforts, and compile a fairly multivocal account of water in the area.

Pearl's mapping project is an example of the corporation, along with their consultant-partner, Avaani, employing visuality as a process to influence human and environmental history as they seek control over a water resource. To pursue its vision of a regulated and plentiful groundwater resource that can sustain the operations of their tech campus independently of external sources of water (i.e. tankers), Pearl and Avaani actively use visual media, particularly maps, to establish that vision as a normative order and historical possibility. Here, maps are effective not only for their visual appeal but also for the social
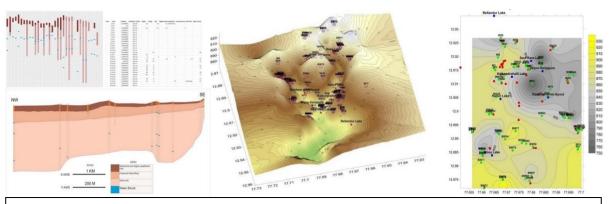

Figure 1 (left). Depth of groundwater and rock type.
Figures 2 (center) and 3 (right). Three-dimensional (center) or contour line (right) maps depicting levels of groundwater.

contact that making them requires.

Technical images such as the ones above were often touted as the *raison d'etre* of the project, for if only one could *see* the groundwater water levels, one could learn how to manage them. But these meanings were contested. While many in Pearl's CSR team saw the project's central aim to be the technical feat of mapping the fluctuations of groundwater, Avaani has mobilized the potential social uses and meanings of maps in service of distinctly different ideas about water and environmental responsibility. For those at Pearl, a sophisticated and accurate map of groundwater would be able to assess the true impact of conservation efforts or extraction patterns for water users and a governing body, whether state- or citizen-led. As Gyan, a senior CSR manager, described:

> This whole program is trying to look at groundwater availability, groundwater extraction, the demand, and the management issues of the resource. So at this point of time, we are trying to create various data sources by trying to get data from various private sources, like hydrogeology, maps, topology graphs. Also from borewells. We have around 100 borewells being monitored right now by the partner. They're looking at the yield of the borewell, we're looking at various borewell parameters like yield, quality, status of the borewell, looking at the lakes in the area, looking at the quality. Through all of this data, they try to create a map of the, an aquifer map of the area, a groundwater map of the area. We want to use this map not just as a static tool, but the community can use this map to interrogate and understand what is the impact of their demand, of their use on the aquifer. So, we expect that this platform [a portal of data and maps] will get the community to come on board. They can submit [data] on this platform, they can talk about their own borewell, they can talk about the availability issues of the borewell, trying to see what is happening over time. The aquifer will be dynamic, it will not be static, so it will probably change its form and nature over the course of the year, over the course of multiple years. And it may tell a story. It may be a tool for communities to organize themselves and then look at how they can better organize for water stewardship.
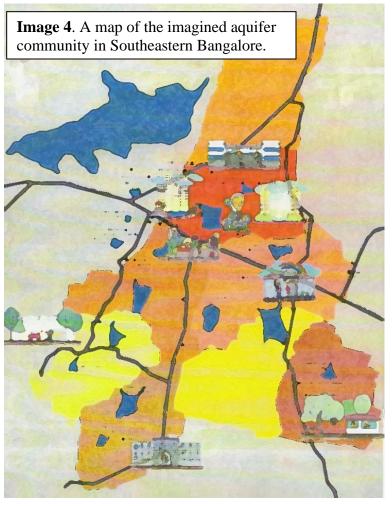
Still a social object with a high degree of community participation, Gyan's description of the project upholds highly rational theories of behavior and citizenship. Much like reading a daily newspaper or checking a bank account, ecologically minded citizens would be able to

log onto a web portal with all the aquifer data and maps to keep abreast of their water use and the general availability of water in the area. Within this vision of technocratic self-management, not only would citizens report their own data and monitor the overall levels of water of the aquifer, but Gyan suggested later in the interview that such self-monitoring could take greater form and force as citizens mobilize for water conservation in the area.

Avaani, however, maintained an entirely different understanding of the map and its role in the project. While some at Avaani could appreciate a dynamic map as a governance tool, the project of creating a map was, more importantly, a process replete with many opportunities to interact with and socialize area residents to their values of water conservation. Radhika downplayed the literal uses of a map: "you can do a lot of studies, [use] satellites, whatever. Depending upon the money and understanding you have, you can map the whole aquifer…That's been done before, but that again seems to have limited relevance. So what if you have a map? What are you going to do with it?." Rather, she emphasized the map's performative and social utility: "Because the whole thing is about managing the resource, and maybe just not the corporate but *everybody* assuming a certain sense of responsibility." Even so, the technical maps created by Avaani and another NGO partner were not merely opportunities to socialize nearby residents into new cultures of water use; they were also articulate performances of a visual-informational idiom meant to convey rational and scientific expertise to those who valued it, such as Pearl. In this respect, the groundwater maps, as, on one hand, data-rich visual objects and, on the other, a thoroughly social process, were highly flexible vectors for initiating new relationships with an array of actors.

The technical images of the project were long imagined to be publicly available, but, several years into the project, its public portal has not yet materialized more than a few images, so they rarely are seen by the public. (Not to mention the problems inherent to an online portal for an area where only few people access the Internet.) The maps' social lives resemble that of visualizations created for the centralized bureaucracies discussed by Scott (1998) and others that control and manage resources – and people – from afar and in secrecy.

A small portion of the public on which Pearl's vision depends on occasionally sees these images but only during highly structured events – formal presentations on Pearl's campus or an area apartment complex. During these events, groundwater map images are embedded within dialogue tightly controlled by the presenters and project staff with audience members positioned only to listen and ask questions during short periods. During these events, the geospatial images of the aquifer produced by the project, are framed as primary, though initial, achievements of the project. With their attention to terrain

Image 4. A map of the imagined aquifer community in Southeastern Bangalore.

and their hyperfocus on water levels, the images perform highly specialized managerial expertise and technical skill, as well as a clear intent to control and manage the groundwater. More importantly, the images, along with the discourse which accompanies them in their rare exposures to the public, reinforce an understanding of water as severely depleted, especially when compared to other areas of an already water-stressed Bangalore. This is a crucial fact for motivating others in the area to participate in the water conservation promoted by Pearl's project and, as I discuss further below, a key part of Avaani's communication strategy.

While the technical representations of the aquifer, which require months of data collection to produce, tell a story of water that motivates people to join Pearl's mission, it is another map that is more widely circulated and does its own work to reinforce Pearl's vision: a map of the water community (Image 4, above). In many ways, the map depicts the community Avaani aspires to create – a happily familiar if not interdependent community of businesses, resident associations, and schools who are bounded together by their care for shared water resources, which is the organizing principle for the map's geography. This map is much more broadly shared than the project's technical representations of aquifer levels. Distributed at public events, included in presentations to introduce the project, and given as a keepsake brochure about the project to interested organizations, the image fulfills a branding and promotional purpose that visibilizes – and visually reinforces – the area's terrain and the project as a happy, colorful water community within it. Water scarcity, the very motivational basis of the project, is, however, absent from this visual. With scarcity interestingly removed, the image becomes, primarily, an aspirational document that reflects the ultimate goal of social cooperation rather than the initial impetus of a depleted aquifer.

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The maps produced by the project visually suggested certain facts (severely depleted groundwater levels), values (technical management, water conservation), and forms of social organization (cooperation among neighbors, a water-based community), but their more lasting impacts lay in the images' performativity. Making the maps necessitated a series of social situations that were far more valuable, as Avaani's process of data collection, going far beyond measurement, reveals: Once they identify people who have access to a borewell and, ideally, are already interested in (or in need of) water conservation, Avaani begins a series of discussions with them. Many conversations fulfill the work of training residents and businesses to monitor borewell levels and submit data to the project, but, at the same time, Avaani staff also create dialogues that elicit a sense of responsibility to water conservation. Avaani focuses a lot of their communication work on what Gyan called "bulk users" – large apartment complexes, businesses, schools. The team, too, has attempted to reach outside of the new urban elite class that was the original focal point of the project to, for instance, borewell diggers, day laborers, those living in informal settlements, and villagers whose environs had rapidly urbanized around them. Though Avaani's team, fluent in regional languages, is linguistically capable of this task, at the time of my research, non-elite groups were not widely represented in the project.

Once communication channels open with a particular group, Avaani keeps up ongoing contact through collecting data, and, sometimes, discussing the technical details of water infrastructure on the premises. These points of contact constitute what one Avaani staff member, Nithin, described as using "data more as a spin-off" in which Avaani staff work to establish an inter-referential community, which centers stories about residence and business complexes who have instituted water-saving technologies. Over time, such references further

develop into an active social network among residents and businesses in the area through invitations, casual information-sharing, and, eventually, ongoing relationships. A water quality testing trip to one borewell by Avaani, for instance, might result in an invitation of several residents there to see the water conservation practices observed by another complex down the street, as I witnessed numerous times. Thus, through the technical task of data collection, Avaani literally brings various people into association with one another – and with water.

Avaani does seek to convey some basic facts about water and its conservation, but they also focus on communication so that they can better influence the *behavior* of people within their jurisdiction. Nithin cogently explained this when I asked him why knowledge and communication were so important for the project:

> I think it's a little more than just knowledge. I think there are three things. There is action. There is a value system from which action comes. And there is knowledge, which informs both action and the value system from which action comes. It's the interplay of these three things…Our problems in society, at the end of the day, are a result of an aggregate of a whole bunch of individual actions, and therefore, the solution to the problem is to acknowledge, am I a part of the problem or am I a part of the solution? And to make a choice. To make that choice, there are three things. One is the value system from which I come, and, two, the knowledge I have. And what does the value system do? It goads you into initiating some form of action as a response to something, so our work is not just about knowledge, it is also about the value system…We are coming from the perspective of there is a larger good, common property resource, sharing, equity, that's what I mean by a value system. And therefore, how do you plunk knowledge [into this]? Because the very same knowledge can be used for better real estate, land grabbing…So, for us, it's saying how do I solve problems which are a result of the aggregate of individual actions through the process of embedding, urging the right value system and right forms of knowledge that initiates and informs action.

Hardly lost on Nithin and others at Avaani, the group actively seeks to influence the larger social imaginary and water culture through consistent messaging and highly affective

rhetorical forms, such as stories, audits, and maps – and utilizes the project funded and branded by Pearl to do so. In its messaging, Avaani maintains several rhetorical goals: (1) to reframe groundwater as a communal resource despite its appearance, through the ownership of private wells, as a privately-owned entitlement; (2) to instill the idea that, as Nithin described it, "I can't pull [water] without putting back;" and (3) to personify and humanize the aquifer in ways that will encourage people to personally and culturally identify with it. Avaani has identified certain rhetorical forms which generate specific social responses (i.e. a strong responsibility to water conservation) from those they communicate with – including from Pearl itself – which emphasize lived experiences of water scarcity and the suffering that results from it, water conservation demonstrations, and hero stories of those who pick up good practices.

Drawing the aquifer literally into sight was an important step in Avaani's attempt to get people to identify with and adopt the aquifer. As Radhika explained to me, "People don't associate with groundwater, because you don't see it…whereas lakes are something that are a lot more visual. So, if you say I'm rejuvenating a lake, you can see the lake fill up with water, the birds come, a lot of other activity [happens], and children play. So, it's a more visual thing." Visualizing the groundwater, thus, became an important task for the project, though some at Avaani expressed that it was a challenge to create technical maps that portrayed the aquifer in ways that people could personally connect to. Whether visual or vocal, Avaani designs its communications strategies specifically to make the shifts in imagination required to impact larger historical and cultural patterns to water and the ways it is valued and treated in the area.

Discussion

The visual as a vehicle to a different future

With their deployments of the visual through educational exercises and visual representations, the water audits conducted by Pearl and Avaani are certain expressions of visuality. Through its acts of re-visualizing water in Southeastern Bangalore, Pearl has elicited visual media to impact the historical trajectory of water there, as well as how people see and interact with it. Ultimately attempting to create a cooperative regulatory community of water users, Pearl seeks to restore water to the aquifer on which their campus of 14,000 employees – and the larger area – depends. Further, the desired historical shift of water security that Pearl seeks to enact is not achieved through merely collecting all the tiny pieces of information such a shift might require. After all, merely centralizing information is limited in this scenario, as information by itself is unable to change the flows of water at the hands (and toilets and sinks) of the thousands of people living there. Rather, Pearl (via Avaani) has turned to visualization as a means to impact history for the social processes and relationships it, as a participative map, generates. Without the ongoing relationships generated by making the groundwater map, the project would hardly draw interested neighbors and institutions into the sense of a common cause and enduring interaction required of an interdependent, cooperative community of water users. Similarly, though with a slightly different goal, Pearl's education program for schools and colleges is an attempt to change education so that it includes water accounting, conservation, and rainwater harvesting knowledge in its standard curriculum. It, too, is an attempt to alter history (at a national scale at that), and it does so through requiring highly specific work of its participants within the realms of the visual and imaginary.

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Destabilizing the normally highly exclusive view afforded by audits and censuses, used to take stock of the resources in a territory or corporation, some of Pearl's water audits, while serving the corporation's ultimate interests, also democratize the totalitizing optic of elites and rulers by encouraging students and citizens to their own "right to look," an act that contests the silent and pervasive authority of city planning regimes and one's own school authorities (Mirzoeff 2011). It is beyond the scope of this work to explain exactly how Pearl's programs shifted ways of seeing for those exposed to its visual re-education, if at all. At the very least, though, their remediation of governmental optics is important for the way it visibilizes and visualizes things normally kept hidden: groundwater, infrastructures, the constructed and malleable nature of institutions, labor, people downstream, animals and plants as members of a shared ecology, and the people inside nearby corporations and residences. By shifting the audience of such abstract, totalitizing representations from kings and officials – and corporations – to children and schoolteachers around the country and to residents and institutions nearby, the water audit not only grants new visual capabilities for a wide array of people but also exercises in agency transferrable to other domains of life.

Pearl and Avaani's water audit also teaches participants to understand water, a chimeric resource, through the logics of financial accounting and to see physical institutional structures such as the school or the gated residential community as the primary site for directing civic petitions. Interestingly, human-centric and profit-maximizing accounting logics inherent to the modernist dam and irrigation projects that have created much water scarcity around the world (McCully 2001), were deployed in the water audit framework used in these two projects. By placing water rather than humans at the center of their accounting formula the water audit disciplines people into water conservation rather than the exploration

and exploitation commonly assumed in education and management paradigms. In the school materials as well as project discourses, terms introduced by Avaani such as the "water income" and "water endowment" reference the liquid not as an income or endowment for humans, but rather as part of the larger ecological system, water's true custodian. People learn to reframe themselves as expenditures in a larger balancing sheet of water use and thus start to competitively minimize themselves. In this respect, the language of finance makes paradoxical the most exclusive aspects of the groundwater mapping exercise in Southeastern Bangalore. The most visible and sustained members in the project were representatives of large commercial enterprises and apartment complexes, leaving single house dwellers, daily laborers, and the un-propertied as perpetually unreached targets in the larger water community in formation. At the same time, because the water accounting framework created a kind of fiscally minded water virtuousness through conservation, it curtailed the potential abuses and market dominance of larger users.

A cooperative claim to power

Avaani and Pearl present a novel alliance between a multinational corporation and an NGO. Though the dynamic seems to be Avaani's attempt at something like what Appadurai (2001) has called "deep democracy" – a multivocal, alliance-based politics that stays focused on long-term goals and centers the poor in its actions and discourses – it more so resembles a broadly hierarchical relationship with Avaani and Pearl positioning themselves as joint hegemons over those they subject to their development projects. While Avaani has made sure that the politics of Pearl's CSR programs focus on, relatively just long-term aspirations, the projects hardly centralize the poor or the most marginalized even though Avaani strives for

their participation and representation. Indeed, Avaani may massage the deeper class divisions in Sarjapur so they result in momentarily just trajectories of water conservation. However, they never fully confront the inter-class contentions that permanently underlie Pearl's CSR presence. The projects further depend on ironing out differences in the discourses and practices of area residents so they match Pearl and Avaani's methods of water conservation rather than maintaining spaces of multivocal plurality – or, when it is advantageous, tiptoeing around differences in understanding.

The alliance between Avaani and Pearl is thus a thoroughly hegemonic one, the whole function of which is to exert control over educational curricula, narratives, and practices concerning water use. It is an alliance which resembles the hegemony of state-led programs of water demand management (Walsh 2011), but it is enacted by fully private entities. And it is an alliance that is fruitful for both parties.

Pearl needs Avaani: Unique among Indian tech companies, most of which are but one generation old and were founded as individualistic enterprises de-linked from family business traditions, Pearl is one of the few older, family-based Indian corporations which managed to transition its production – and corporate idiom – to high technology. Pearl thus presents itself as an image of modernity, global success, and transparency – values of great worth in India's current post-liberalization era – while it eschews the recently emergent connotations of nepotism and corruption which now haunt family-run business empires. Yet, with its large investments in education and its thoroughly friendly work in nearby communities, Pearl also maintains a style of patronage, evident both in its Chairman's personal philanthropy and in the corporation's CSR, that resembles the patronage styles of India's older, family-run corporate dynasties. This idiom presents itself as uniting the best of

two disparate worlds: that of paternalism (a *maa-baap* patronage which cares for the community through individual and programmatic acts of generosity) and of modern, transparent corporate giving. Avaani, with their highly personalized communications strategy in Sarjapur, helps Pearl in the difficult task of maintaining this blended idiom.

Pearl also needs Avaani for the way the NGO can create a continued sense of distinction for the corporation's CSR. Though Pearl has long invested in CSR programs, legislation passed in 2013 in India made CSR mandatory for companies over a certain size. The law has no precedent elsewhere in the world and places pressure on corporate giants with established CSR programs, such as Pearl, to continue to distinguish themselves in an environment where CSR has become the norm. Most importantly, the inter-class contestations which intermittently erupt over water, waste, and land – and which occasionally bring Pearl's operations to a standstill – compromise images of Pearl as a kind, fatherly community patron and CSR visionary. Avaani manages these optics with programs that promise to curtail the water use of elites and discourses that downplay class conflict by presenting everyone, especially Pearl, as equally impoverished when it comes to water in the area. Pearl benefits not only from Avaani's labor in greenwashing their corporate reputation, but also from Avaani's progressive, inclusive politics, because Avaani's authenticity further improves Pearl's larger corporate image as an innovative, sustainably minded "corporate citizen" working in the community's best interest.

Conversely, Avaani also needs Pearl. The corporation generously funds Avaani's work. Pearl is also a well-known name, both locally and nationally, whose projects give Avaani both impetus and legitimacy for their aim to restructure elite water demands in the city. Avaani's use of Pearl to enact their liberatory vision of groundwater awareness and

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management is a mutually beneficial arrangement but one based on several mutually upheld silences. Not exactly co-opting the corporation to occupy it clandestinely for its own purposes, Avaani can instead pursue its own specialization – water conservation technologies – and ethical vision while fulfilling Pearl's interests. They further understand the delicate considerations necessary to a philanthropic relationship: In all of my interactions with Avaani's team, I never heard one of them disrespect or critique Pearl; conversely, they consistently reference the rare morality and innovation displayed by Pearl in their initiative to pursue sustainability.

Scholars remind us that hegemony, so commonly applied in humanities and social science analysis, not only is defined quite differently depending on the academic field (Robinson 2005) but has also fluidly morphed through various meanings throughout its historical use (Anderson 2017; Boothman 2008). Here I have primarily drawn upon Antonio Gramci's theorization of hegemony as a mode of domination through coercion (as opposed to force) which is applied between classes or groups (2011). However, another understanding of hegemony, that which takes it to be a form of leadership or political education of one or more alliance groups in the formation of a larger historical bloc, is also at work in the politics of water development pursued by Pearl and Avaani. In the highly performative exercise of collecting data and enhancing awareness about groundwater, Avaani and Pearl are also quietly, even if unintentionally, building political alliances with and building a kind of political education of other, mostly propertied members of the community within the Sarjapur Road area. One wonders where this will lead. Though the state has surely not disappeared from Sarjapur Road, its IT-exempting policies and the secession of its water service has created a politics where a tech multinational and NGO, in the name of

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philanthropy, make moves to assemble themselves as water authorities, even if seemingly

egalitarian ones.

But, these projects, though hegemonic formations, contain liberatory possibilities.

Why would a corporation be involved in such a liberatory, even if hegemonic, experiment?

Ecological crisis and strategic consultant labor

Pearl's sense of being caught in the middle of a water crisis starkly affects the way

they created their sustainability programs. Pearl, confronted with literal and debilitating loss

of water (and with it, millions of dollars as they had to shut down a business site),

immediately recognized the stakes of water scarcity. This soon structured how they saw even

those who they used water alongside, the apartment complexes, businesses, and people in

their area – and what the state of any human activity might be if water use continued

unaltered. This perspective was afforded to them by their subject-position *inside* water crisis,

and it entitled Pearl to act as a concerned stakeholder itself (rather than locating the

stakeholders through whom it might construct a development achievement, as development

organizations often do). Located inside of crisis, Pearl sought not just to mitigate water

scarcity, but to end it completely.

Yet, certainly not all companies initiate liberatory sustainability programs and

community water user associations upon confronting water problems, especially the kind

which bring businesses to a halt. Another initiative that I studied, which also depended

primarily on mapping the fluctuation of water resources, was designed to allow companies to

see the pending water risks surrounding their current and future sites of business production

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in India. Though released to the public, the "tool," aside from its obvious illustrations of water scarcity and plenty, offered features that would be lost on most outside of capitalist production, such as its ability to recalculate risk depending on the amount of daily/monthly water extraction, recharge, purification, or polluted emission or its setting to erase all reports and history without any backup. (A project manager elaborated slightly in an interview, "Because companies have a lot of confidential information they would not like to store anywhere, to save anywhere, because there is a lot of security concerns" (interview with author, July 2015).) Designed by representatives of various industries, including several Bangalore-based tech companies, for their company interests, such technologies make it easier for businesses to simply avoid or abandon facilities at the outset of a water crisis, as many do.

Pearl, however, has not decided to leave. Why? While some might prefer to answer this question with arguments about the rare morality of Pearl, two other factors must be considered. First, groundwater depletion is pervasive across India, especially in urban and peri-urban areas, and Pearl anticipates that nearly half of their campuses are at risk of experiencing similar water shortages. Given how deeply Pearl's operations are already entrenched, groundwater depletion and governance are not problems that can be solved with relocation, which comes with many new costs, such as training new labor forces and adapting to new regulatory environments.

Underlying Pearl's sustainability programs, most importantly, is a range of actors outside of the corporation who observe a highly specific communication strategy to bring various people, including the corporation, on board to the projects and their liberatory logics. Most partner organizations have minimal impact on Pearl, except for one: Avaani. Because

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of its wide exposure to Pearl's projects, Avaani is able to redirect corporate resources toward its own plans and values. It does so by mobilizing a set of highly coordinated and focused communication strategies, first, with Pearl itself and, then, among interlocuters in the surrounding area of Sarjapur.

The long-term impacts of Pearl claiming, propagating, and pursuing visuality are hard to identify at this point, but many seem beneficial from a wider lens than just the corporation's interest in self-preservation: Tools of a powerful planning elite are made popularly available, people of many backgrounds are invited to jointly participate in a water community while those who are more elite are convinced to curtail their consumption patterns, and an area of Bangalore headed toward a truly debilitating water crisis is made more sustainable in seemingly ethical ways that do not overtly deprive anyone of water and which remove pressure from already contested surface water sources such as the Kaveri. For students, schools, and teachers, it's even more difficult to say, but, somewhere, there exists a rainwater harvesting system where there was none before. One could also consider the emergence of environmental sustainability curricula across the nation, as well as the over 100,000 students and teachers who have learned about water conservation and reimagined more sustainable versions of their educational institutions.

One should not accept the terms of such programs without question, of course, starting with one term used so frequently within the projects' discourse, "working beyond the fence." With its immediately warm connotation of the increasing bounds of corporate consideration and humanitarianism, the phrase also importantly denotes an expanding corporate claim to power and territory. In this case, it is control over water in the regions surrounding its IT campuses that underlies Pearl's seemingly community-focused projects.

After all, going "outside of the fence" is a privilege, it seems, that only Pearl takes. All others in its projects are given strategies for water conservation that resolutely encourage them to remain and reform what is *inside* their fence.

The visualizations generated by Pearl and Avaani, while bringing an otherwise invisible element, groundwater, into sight, have themselves occluded many things from view, such as an awareness of the village life that has been subsumed by new developments in Southeastern Bangalore and which continues to function within it. While maintaining its focus on corporations and residential enclaves, denoted with rainbows and sunshines on their community map, does their project function, even inadvertently, to fortify those who are already most powerful in the city's planning regime? Further, however liberatory or beneficial Pearl's work, because its projects seek to manage and redirect the actions of people according to its own values and goals, it likely restricts the potential expressions of autonomy to a few prescribed forms (Strathern 2000) – as suggested by the established dynamics of students in its education program. After all, Pearl teaches project participants the skills required of visuality not necessarily to empower them, but to bring about the changes the corporation is interested in.

The sustainability education project in particular also retains blatant assumptions about the kind of knowledge that is required to understand and conserve water, largely due to the extreme urbanity in which the project came about. Pearl's lack of water knowledge was very much a product of an urban-corporate sensibility that assumes an unlimited presence of water through piped water supply or borewell extraction, and if it were not for a specifically urban water crisis, Pearl might have never prioritized water awareness in the way that it now does. Avaani consultants, too, have developed their knowledge of water in specific reference

to coping with Bangalore's water shortages. The project assumes that students and teachers who participate in the school project, many who come from rural areas, cannot see or understand water because of buildings and institutions, such as schools and corporations, which invisibilize them. Irony is not lost, however, as students and teachers tour both the city and IT campus during the awards weekend at sites earmarked as positive examples of water conservation. Many students and teachers remark, in between official sessions but not during them, that the city, unlike the localities from where they live, wastes water and energy at rates and in ways they had never imagined. Even a teacher attending the awards weekend on behalf of a school based in a water-scarce area of Bangalore remarked extensively to me the specific role of IT companies such as Pearl in generating the current water crisis in the city. While a highly social and mostly exciting affair, the awards weekend also generates contrasts that suggest corporate modes of seeing, valuing, and conserving water (by teaching students how to audit the water use of large buildings) may not be the most appropriate knowledge for students to see, value, and conserve water in the areas where they live now or in the future. Some of these distinctions are also not unnoticed by the organizers at Pearl CSR, many who admit that it is they who learn the most from the students and not the other way around.

As its groundwater visualizations remain under tight control of the corporation and its partners, Pearl and Avaani's water audit does not fully shirk high-modernist customs of seeing the realm by census. The CSR department becomes its own kind of centralized, deeply protected surveillance unit that visibilizes human or environmental blockages to capital and its future possibilities – and, when necessary, expands the power of the corporation well beyond the factory and office workplace and into homes, businesses, and schools. Aptly named, the highest-ranking team within Pearl's CSR is called EcoEye. Designed to be a

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small, flexible team that can cut across all corporation departments in its mission to both

control that which is seen of the company and to call into sight any financial or corporate

risks. Though speaking in reference to its national education program, one member of

EcoEye's small team, Gyan, did not negate EcoEye's watchman role by saying "If the last

few decades were about IT and the previous century was about industrialization, the next is

going to be about ecological issues. How do you manage those?" (interview with author,

November 2014). In some ways, the modern corporation, especially one that has hit the

second contradiction of capitalism directly, to full stop, cannot afford to be without such an

eye.

Corporate but Not: Philanthropy as vocational refuge and shade spot in India's liberalized economy

In the previous two chapters (Chapters 3 and 4), I analyzed several specific development projects supported by private investment from the tech sector. In this chapter, however, I shift my analytical gaze to examining the world of work such flows of capital create. Conversations about development, within academic scholarship and popular discourse, often operate according to a tacit poetics that centralizes the significance of development projects and their outcomes. In *Swachh Bharat*, for instance, it is the number of toilets built and the percentage of the population which can be classified as "ODF" ("open defection free") that demarcates the progress of the government initiative. Such a focus on project process and outcome is important, because it invites careful scrutiny of many of development's promises, failures, contributions, and unintended effects. But, at the same time, this focus obscures other politics, relations, effects, and benefits that may be set in motion by development. I thus step aside from analysis of development's projects to examine a component of development – everyday NGO work – and one of development's so-called beneficiaries – the NGO worker – that often go under-considered.

Work is a realm of activity that is deeply constitutive of society and many of its institutions. It is the primary site where people derive life- and family-supporting incomes, and it is where people are transformed into vocational specialists (e.g. bankers, counselors, teachers, accountants – in this case, development or social sector workers). As such, the labor and sites of work created by tech sector patronage must also be considered as an intrinsic part of its politics. This chapter thus traces the meanings and experiences of everyday work, untethered from its roles in specific development projects or outcomes, in an NGO that I call

Jaldana, a grant-giving organization funded through private philanthropy. Jaldana employee work narratives often describe escaping past positions of degrading corporate employment and place a high value on their worklife at Jaldana, revealing not only important and under-considered moral calculations that orient the NGO but also that salaried nonprofit work itself is a significant and enduring benefit of development.

In most discussions, the moral calculus of philanthropy hinges on the tangible benefits brought to those who receive its gifts or, more seldom, the senses of fulfillment or care displayed by those who give (Bornstein 2012). The literature on development is similarly replete with research that has gauged its moral workings and larger contributions (or failures) to social justice on the basis of large ideological orientations and project administration and processes (Schuller 2016). Indeed, the assumed moral work of NGOs is located in their development projects (or in their very existence). While such analytical frameworks bear important potential for application and theoretical scholarship, here I would like to pause to adjust the view. Perhaps the most lasting moral work of some NGOs (and, in this case, NGOs created in the ambit of tech sector funding) is not to bring benefits to the world by way of initiatives and development-subject populations. Instead, here I consider NGOs as workplaces and sites of everyday labor that potentially offer life-changing benefits to their workers. The moral contribution of development thus might rather be found in the ways non-profit organizations are used by their employees to divest from corporate employment and reexamine their participation in capitalism and systems of inequality more generally. I explore these inquiries through the case of Jaldana, where I conducted

approximately 8 months of participant observation and interviews with many of its employees during 2014-15.

By analyzing the conditions and policies that affect employment in Jaldana and its programs, I follow calls for greater ethnographic research on labor within development organizations (Hindman and Fechter 2011, Mosse 2011). My argument, however, importantly depends an on inflection of the terms of such discussions, asserting that, in Jaldana, the non-profit organization is a site where development workers themselves re-make work. I argue that employment policies do not only make the development worker and her orientations, but, rather, the development workspace can also act as an occupational reserve where employees negotiate capitalism-critical positions, develop philosophies about social justice, and re-make work and their relationship to it – all endeavors which are difficult in corporate employment.

My provocation draws, in part, from the small but important literature concerned with the roles of personal experience, labor, and employment policies in mediating development work (Fechter and Hindman 2011; Mosse 2011; Watanabe 2015). Such literature seeks to emphasize careful ethnographic attention to individual experience of development labor, so often lacking in critical analyses of development. Anne-Meike Fechter, Heather Hindman, and their contributing authors make the argument that development labor is not only highly variable, resisting any homogenous characterizations, but it also significantly structures development itself and its outcomes. These authors argue that understanding the labor and personal experiences of aid workers could be key to understanding many development failures (2011, 2), for employment conditions can alter the very demography of who is attracted to and hired into development as well as their motivations. Hindman reminds that

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the same neoliberal policies which have drastically altered work and marginalized workers around the world (e.g. outsourcing, subcontracting, performance audits, etc.) are also applied without hesitation across development institutions (Hindman 2011). Such changes to employment policy impact both workers and the development tasks they are charged with executing. Breaking development work up into smaller parts or shortening employment contracts from several years to a few months makes it so a single person or team cannot determine how their work impacts the larger development goal(s) to which they are committed and further alienates workers from their labors (Hindman 2011). Similarly, hiring primarily technical experts at high pay scales or according to steep incentive structures diminishes what used to be commonly seen as important compensation in development work – doing good – and instead fosters the recruitment of development professionals who have little moral concern or responsibility for the outcomes of their work in development (Hindman 2011). Alternatively, feelings of isolation and homesickness common among expatriate development workers abroad can propel them to create insular social networks that center their home culture instead of local customs and values crucial to designing and implementing feasible development projects (Verma 2011). At best, anthropological accounts of development have too often avoided deep ethnography of the individuals who carry out development, creating a significant blindness on the micro-processes and labor which comprise it (minimally) or even a fundamental misunderstanding of development itself (at worst). This chapter contributes to these discussions and further develops them by focusing on non-profit employment as the site of an under-considered moral labor through which development workers re-make work and life, a process that renders development workers as one of the principal beneficiaries of tech sector development patronage.

But it is also important to ground discussions of development industry labor in the larger economic processes in which it unfolds. This specification – contextualizing development labor at Jaldana in light of the organization's particular structural location within development (as not only a "donor organization" but an indigenously funded and staffed one) and recent economic changes within India – contributes further nuance to scholarly discussions of development labor, which have often centralized the participation of expatriates or "grassroots" organizations in the nature of development work or which have, in some cases, presented development labor as a function of shallow histories of organizations or the individual who comprise them, rather than larger economic processes. The particular economic structures which formed the employees' work narratives that I discuss here are hardly universal or general, as broad terms such as "capitalism, "development," and "corporate employment" imply, nor are they dynamics which should be cast aside as mere personal experience, even if employees present them as such. Indeed, Jaldana, its small labor force, and its employees' references to past corporate employment must be specified to the particular cultures of capitalism and work which have emerged in Bangalore and throughout India in the past two decades as a result of ongoing economic reforms.

The macro-economic processes of liberalization have continued to unfold in India for over twenty years and have substantially expanded private, service sector employment in India through policies that privatized publicly owned industries, facilitated the businesses of foreign and multinational companies, and reduced restrictions on imported goods. Apart from the material consequences that these drastic shifts have had on regimes of urban space and ecology (see Chapter 4), they have also fundamentally restructured the labor market within India's "new" economy. This restructured labor market has expanded private sector white-

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collar professional employment and effectively remapped the ideal of middle-class

employment from positions in public institutions to private companies. However, white-

collar work is increasingly defined by job insecurity through mechanisms such as

downsizing, contractual or temporary labor agreements, and quota or other performance

requirements (Fernandes 2006). New opportunities in private service sector employment are

not accessible to most and accentuate existing stratification within the Indian middle class, as

Leela Fernandes demonstrates in her study of class in India post-liberalization (2006).

Although a rather small and privileged segment (mostly English-speaking, highly educated

upper-middle class) are able to acquire executive and management-level positions that come

with the perks of high salaries and benefits, most others in the middle class must deploy a

range of cultural and social capital, such as credentials from training institutes or the

corporate workplace-appropriate comportment taught within such programs, in order to

acquire a promotion or even a foothold within this market. Fernandes notes that despite such

deployments of social and cultural capital, while some may indeed find a job or promotion,

these positions rarely lead to changes in one's specific structural location within the middle

class (2006). It is within this context of labor restructuring driven by economic liberalization,

that the individuals I discuss in this chapter sought out and eventually reflected upon their

development labor at Jaldana.

Jaldana is considered in the larger ecology of non-profits as a "donor organization," a

category that conveys salient information about the organization's place in the political

economy of India's development sector. The term marks the organization as resource-rich

and, as a funder of other development organizations or initiatives, in a position of dominance

over others. The term "donor organization" also conveys additional connotations of that

wealth and position, such as Jaldana's implicit high status among other non-profits who consider the organization as a potential source of future funding. During my fieldwork, Jaldana staff would frequently reference such organizations as UNICEF, the Bill & Melinda Gates Foundation, USAID, DFID (the Department of International Development, based in the UK) as peer institutions, and even though Jaldana was much smaller by comparison, with approximately 25 employees, it was sometimes included with such select institutions in exclusive meetings with government or other development entities. Indeed, one employee corrected me when I asked how Jaldana, as a rather small NGO, had come to occasionally achieve influence within various state bodies by saying, "See, we are not a typical NGO. For a state to work with us, [it] is relatively safe, because we are like a UNICEF. We bring our own money. We bring the necessary expertise. We are not at the UNICEF scale, clearly. But, in that sense, we are not a typical NGO." Jaldana's ample financial resources, which included intellectual as well as economic forms of capital, set it apart from "typical" NGOs and, indeed, most development organizations, in its labors, status, and ability to liaison with powerful bodies such as the government. However, one important distinction between Jaldana and other elite development institutions is that Jaldana's funding and staff are all Indian nationals. Its top directors and founder periodically emphasize Jaldana's fiscal and intellectual indigeneity with pride, but this seemingly patriotic assertion of Indianness repeats moves made by earlier elites and segments of the upper-middle class in India who also problematically made claims to national representativeness on the basis of moral regeneration and a dedication to uplifting the poor despite, all the while, constructing highly exclusive projects of belonging and citizenship (Fernandes 2006).

In both its funding and staff, Jaldana embodies both these historical characteristics of upper-middle-class identity (claiming moral and political representativeness for the nation despite perpetuating exclusions based on caste, wealth, and gender) and recent macroeconomic shifts brought about by liberalization reforms. It is a major philanthropic extension of a family made wealthy by India's growing tech sector, which makes the non-profit intimately associated with IT sector wealth and prestige, recent accumulations of capital which emerged in concert with national economic reforms. It was the capital and administration of large corporate IT firms that created Jaldana in the first place, and the non-profit is itself an active, everyday site of corporate capital investment. Yet, even if intimately linked with liberalized and corporatized capitalism's institutions and interests, when possible, Jaldana's office is actively made quite distinct from its fully corporate counterpart work environments by its employees. That is, employees make Jaldana a safe zone, or shade spot, from corporate capitalism and various aspects of liberalization, as I will argue later in this chapter.

Most people who work in Jaldana originally came from corporate backgrounds, exactly the jobs that have come to define the aspirational registers of India's new middle class. But instead of relishing these relative positions of status, wealth, and purchasing power or using them to obtain even more lucrative employment positions, nearly all sought the non-profit labor arrangement as a conscious re-evaluation of working in corporate environments, where they were expected to be fiercely competitive but uncritical of their roles within the capitalism of India's liberalizing economy. Rather than merely seeking to be custodians of development aid, as is often expected of development workers, the non-profit workers interviewed here detail their motivations to work in a non-profit as seeking a relaxed but

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inspiring workplace. The non-profit workplace allows them to partake in questions of morality and social critique as a part of their daily professional responsibilities, activities which would be difficult in corporate employment.

The socioeconomic positions of most workers at Jaldana are more elite than most in Indian society and do not vary widely beyond the upper-middle class. This class status is reflected in the predominance of English among the many Jaldana employees who prefer to speak English not only in the workplace, but in their homes, making English more than just a useful skill applied to perform tasks of employment but a fundamental component of identity. Elite socioeconomic status with Jaldana is also indicated through people's cosmopolitan dispositions, which manifest as an areligious secularism, food politics (widely sharing food, eating meat as a political statement or simply as a norm), or cultural practices which lower segments of the Indian middle class must enroll in training institutes to learn (e.g. modes of dress, hygiene, and speech appropriate for white-collar professional workplaces). It is not uncommon for Jaldana employees to have spent time abroad for work or education, and many also have family histories that are similarly geographically mobile. Several Jaldana employees have degrees from the most prestigious universities in India, the Indian Institutes of Technology or Indian Institutes of Management. The graduates from these institutions comprise merely 3% of the total university students in India but can often command two to three times the salary for the same positions. The diversity of Jaldana's workforce, from the time I was introduced to it in 2011 through 2015, expanded to include several new team members from less elite backgrounds; however, the workforce still remains largely English-speaking, Brahman, and upper-middle class.

In this chapter I draw from interviews throughout Jaldana's staff but focus closely on the narratives and work histories of several employees within one of Jaldana's dedicated work teams, *Jal Jaal* (Water Net), a digital informational platform on water. I introduce them here. Rohan is a previous program manager of the Jal Jaal project who had worked in sales at a famous multinational tech firm. Latha, whose work with the Jal Jaal platform had ranged from coordinating its volunteers to assuming managerial responsibilities for the platform, had worked in commercial advertising in the Middle East before relocating to Bangalore and starting work at Jaldana. Ameya, the chief technological officer for Jal Jaal, had worked in several tech companies before coming to Jaldana. Adil, Jaldana's director of programs who often worked with Jal Jaal to integrate the enterprise with other programs at the organization, had never been employed in a corporation but had commenced graduate studies in Chemistry before switching to a program in Forest Management and rural development. Finally, Shwetha, Jal Jaal's editor, had worked in corporate sales before pursuing employment as a copyeditor with several non-profit organizations.

Jaldana's office is where all of the above employees would go to work everyday (except for Shwetha, who worked from home just a few kilometers away). It is located in the bustling, largely upper-class area of Bangalore known as Koramangala. Today, Koramangala is considered one of the poshest areas of the city, home to IT offices, mansions of several famous city residents, world-class shopping, and nightlife. Jaldana is located in a building converted from a joint family household. The three-story building contains many rooms, at least two kitchens, and a rooftop terrace. Outside, the indications of this conversion are subtle: like many surrounding homes, cars are often parked in the driveway, a security guard

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stands watch outside at all times, but a single organization insignia and name have been mounted to the entrance of the building that demarcate it as a business rather than a home.

Inside the front door, which is almost always kept open during business hours, a small, peaceful waiting room offers comfortable chairs and a selection of publications about water and current events. Sporadically, conversations pop up in this space among employees who are coming and going between work and lunch or out-of-office trips. A little further inside, one is welcomed by the fish- and water-themed murals painted in a Madhubani folk style throughout the building's interior walls, as well as by Jaldana's incredibly friendly receptionist, Leela, who manages the appointments and travel itineraries of everyone in the office. Everyday Leela updates a whiteboard in the room that announces important meetings or events occurring at the organization, an essential function for the workplace, as there are often lectures and educational activities occurring at the office in addition to project meetings.

Jaldana is a dynamic workspace. On some days, only a few people are in the office as others travel to workshops or site visits. On other days, the full staff of nearly 25 people is present. In the office, people may comfortably begin their workdays anywhere between 8 and 10:30 a.m., as they choose, and similarly leave work anytime between 4:30 and 7 in the evening. Many people choose to work late, but they do so without expectation from peers or supervisors. Working from home is also frequently and flexibly offered in Jaldana as an option for many employees depending on the amount of in-office meetings or activities scheduled for the day. Jaldana's staff work in small teams, which sometimes have overlapping personnel. Debates, banter, and joking often thread through the office's open design plan as people work, no matter how busy things get. Lunchtime is a natural extension

of the sociality that pervades the workplace. Many people in the office eat lunch together on the rooftop terrace, often sharing food (both vegetarian and meat dishes) with one another without hesitation and thereby partaking in a cosmopolitan and difference-minimizing practice that Ken Kuroda calls "performing intimacy" (2018, 194) through publicly sharing food at the workplace. It is not uncommon to end lunchtime or the workday with table tennis matches, which also occur on the rooftop terrace. Newcomers and visitors are often invited into conversations and table tennis, as well as snack runs that might punctuate the afternoon. The overall atmosphere of the workplace is gregarious and playful – even in the frequent political or philosophical debates which occur throughout the day and which usually sustain quite a bit of difference of opinion. Over the several years I had made visits to Jaldana, starting in 2011, I noticed that that the jovial and intellectually curious atmosphere sustained in the organization despite otherwise drastic changes in staff composition and the physical space itself, which had been steadily improved over time to renovate the previously unused rooftop terrace and to decorate the office interiors with custom, water-themed folk art.

Talking about work, critiquing corporate labor

As interviewees reflected on their work at the non-profit, almost all spoke extensively about their experiences with the corporate world, whether in IT companies, sales, advertising, or large financial institutions. Indeed, most employees in Jaldana had spent years working in a large corporation before they made the conscious decision to find work in what is commonly known as the "social sector" in India. Workers migrated from corporate employment to the NGO often with considerable sacrifice to what many see as the greatest benefit of a corporate job – a high salary. Several said that they were previously making three

to four times their NGO salary before moving occupational sectors. One employee, Neerav, after studying film at a European university, took his first job at an NGO where he found the monthly salary unlivable (6,000 Rs. per month or approximately $101) despite having offers from corporate institutions where the pay was much greater. Some also considered their work at Jaldana to be more laborious, and others left behind the assurance of promotions and bonuses granted by corporate employment. Regardless, almost all of those who left a corporate scenario seemed to do so on the basis of an evolving, lived critique of the labor arrangements they encountered there. Their narratives pose striking critiques of corporate work cultures, and thus the particular cultures of capitalism they found there.

Subjecthood, and its degradation, in corporate employment

"You have to be a crook to survive there. You have to be an even bigger crook to grow there. Not all corporates are bad, but most of them are like that." – Ameya

Jaldana employees recognized the ability of a job and the set of relationships one encounters at work to actively alter who they might become. Within their narratives of their past and present work, the greatest danger of working in a corporate position was that it makes one subservient, small- and narrowly minded, even stupid, self-denying, and amoral. Not only were their corporate workplaces filled with "corporate people" who had assumed many of those traits, but many saw their own senses of self erode into that set of undesirable characteristics, culminating in a degraded sense of personhood.

The two primary values that sustain and orient the corporate workplace, according to Jaldana workers, are the pursuit of money, the primary goal of corporate labor, and the

maintenance of hierarchy, a central principle to organizing that work. The tasks that would generate profit (as they were divided and given to employees) were ultimately "small tasks" which denied the use of one's higher mental faculties, both intellectual and moral. As Rohan described, "When you're working in the corporate world, the scale of the problem is, How do I solve sales issues or marketing issues? Productivity issues?...You have corporates which are huge, and they try to attempt to solve small problems, whereas non-profits are small, and they try to solve huge problems." Beyond the miniscule amount of intellectual and moral skills required to complete corporate work tasks, "smallness" also poses a criticism of corporations themselves, namely their avoidance of addressing pressing problems that face society.

There is one skill, however, that one could learn in a corporate setting and that is the skill of following orders. If working "to make somebody else rich [and] also to make myself rich" produced a sense of meaninglessness, as it did for Ameya, then working in a clearly defined hierarchy produced a sense of subordination. Elaborating further, Ameya said, "See, you have this limited time and energy during the day. Then, where are you putting that? The time and energy that I was putting on was to make somebody else rich. Also to make myself rich. But, at the cost of so many other things. Such great brain power, mind faculties that we have as human beings which makes us so distinctly different from the animal kingdom and then we go and use it for one small thing of making money or some social recognition."

The workplace is one of the most frequent and everyday sites of confrontation between the ruling classes and the ruled (Weeks 2011), including in South Asia where it is often labor relations which also make the home, the street, and the market everyday sites of inter-class encounter. Hierarchy in the corporate workplace, too, organizes the differently

classed and is used to actively subordinate corporate employees. The practice of subordinating another usually is dependent on some form of dehumanization and transcends an array of inter-class interactions (Dickey 2016). In their past corporate workplaces, Jaldana workers experienced dehumanization when supervisors and colleagues micro-managed; when they withheld respect, kindness, or privacy when communicating correctives or when they cut employee benefits or suddenly demoted them with little explanation.

Learning to act within a tight hierarchy can take tolls on one's person and even one's facultative capabilities. In Jaldana employee work narratives, following orders and hierarchy, as a learned trait, led to a certain kind of obligatory (at first) and permanent (eventually) blindness that was both moral and intellectual in nature. As Bhavya, a past employee of Jaldana who now runs her own non-profit, put it, in a corporate job, "it's your role to stay stupid." According to Latha, who had worked in advertising before commencing what was five years of non-profit employment at the time of our interview, "I couldn't imagine myself doing that for the rest of my life. It was just not valuable. *At all*." Working in a corporation thus seemed to result in a fundamentally compromised sense of self and a drastic undervaluation of one's vital energies.

The "smallness" of tasks performed by workers in their past corporate lives further produced a compromised sense of self, because the tasks themselves were, at best, meaningless and boring and, at worst, amoral and deceptive. Spending so many hours each day and using one's vital faculties on meaningless tasks, was fundamentally a waste of living. And this was, for Jal Jaal workers, the primary motivation to move to social sector employment. Some expressed that they were disturbed by the moral self-deception required to uphold their work duties, as for Shwetha: "In my case, it was selling bullshit products to

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brokers. You wouldn't believe the amount of money that is there. Like, I could get bonuses –

$50,000 – just for making a sale. That's the kind of life that I gave up. Because, at the end of

the day, I couldn't live with myself. Because you're actually pretending to someone that

you're selling them a solution, but it amounts to garbage. What are you selling the products

for? To sell, to make even more money and trade and all of that? What is that? You're not

making a difference to anyone."

> Ameya described his experience with corporate labor in similar terms,

> "Though [my] career was going on very well, I was not happy with it. It didn't
> go well with my ideology. And conscience is something you can't stifle often.
> Because, your ideology is one thing and then your actions-- Where is the walk
> in the talk, right? That is something terrible to answer to. You know that this
> is not something that you should be doing, yet you are still engaged in it. You
> talk of high ideals, but you your actions belie [those] ideals. That is not an
> easy conversation to have with one's self."

In these narratives, something much more complex than personal happiness is at stake. While

one could lead a pleasurable life using the salary and prestige conferred by a corporate

position, this kind of happiness was not enough, for it would constantly be eroded by one's

conscience. Whether merely boring or amoral and self-deceiving, Jaldana workers with past

corporate lives ultimately decided that a compromised life-at-work – and witnessing a

morally compromised version of themselves – were not worth the benefits of corporate

employment.

After making the conscious decision to leave corporate work, a potentially risky

career move that did not ensure re-employment, interlocutors found refuge for their life-at-

work in the NGO setting of Jaldana. Many did not know what would await them there, but

once they arrived, most found it so agreeable that they then planned to permanently remain

working for non-profits. The chief benefit of working at an NGO, as opposed to a

corporation, is not that NGOs are necessarily the perfect do-gooding entities that their vision statements suggest, but that they don't make the self-denying, dehumanizing demands that corporate work culture does. Employees do not have to subject themselves to various discipline that was expected of them in their past corporate employment, such as working strict and inflexible hours or following the instructions of superiors without question. Even more, they are not required to make the sacrifice of moral and intellectual selfhood and of freedom of character they were asked to make in corporate settings.

But what made the NGO job fulfilling for those at Jaldana? Employees are highly varied in their motivations and ethical orientations, which creates a fruitful terrain for social interaction and debate – hardly a reduction of the intellect to the mindlessness of corporate profit-seeking (Shwetha). They work on society's "big problems" (Rohan). They are conscientious and devoted, if not self-sacrificing, in their work, believing it will help others (Ameya). Such virtues – conscientiousness, big-mindedness or being world- and other-oriented, being intellectually varied and reflective – are not only hard to find in a corporate work life, but in the highly insular world of upper-middle-class or upwardly, economically aspiring middle-class social life in general. Many mentioned the socially positive, do-good mandate of the workplace as an important factor; however, doing good is just a small part of what makes the non-profit a good work environment.

A better life at work

Fulfillment in one's work is also very much about the kind of life one can potentially live while at work and the kind of self one can preserve in the face of everyday laboring. In an NGO like Jaldana, not only are people not asked to block themselves off from their

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passions, moral or intellectual faculties, but it also gives one a wider lens through which to see the world. Doing good thus offers additional benefits beyond just the potential to participate first-hand in improving society: if working at a corporation could result in sustaining a kind of blindness to the world, the NGO demanded that employees further explore important societal issues and thereby open their eyes to the world.

In this respect, development non-profit labor also solves another problem with corporate work – its isolation from the world. Within Jaldana, this was hardly a mere conceptual maneuver in the sense of its employees thinking about and discussing the details of development projects. Rather, the boundaries constructed between work and world at Jaldana are quite porous. At the office, there are often organization-wide presentations by guest researchers or project partners, games orchestrated for better staff bonding, and special lectures (one day, I came to the terrace for lunch only to find most of Jaldana's staff seated at tables and on the floor listening to a formally scheduled lunch lecture on the start of World War I, a topic chosen to metaphorically speak to tensions between India and Pakistan). At such events, all staff, including those responsible for normally menial office tasks, are invited to attend. Employees also periodically go off-site for staff retreats or, more commonly, to attend educational events and trainings. Movements outside of the office, or that invite the outside world into it, are of course small in comparison to the field visits and travel, sometimes international, for conferences or project meetings. Conferences might take people to as far away as Singapore or Nepal or to various locations, urban or rural, within India, and field visits are dictated by the projects in place at the organization, which are located across India and Karnataka. Such travel is enfolded into the organization's regular work, especially for directors and project managers, who are often gone for multiple days at a time. Far

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beyond a customary requirement of work, the dissolution of boundaries between work and world that Jaldana employees could observe, as they narrated in their interviews, produced some of the greatest benefits they saw to be conferred by non-profit employment.

Finding an alternative experience of class in non-profit work

The benefits of exposure to "real issues" or cultivating "a broader view of life" and the world, as some put it, were often described as being embodied by the people one encounters in development work. These encounters are largely about being exposed to an alternative upper-middle class, as well as class others in the form of development subjects. For example, Shwetha describes her interest in non-profit work, developed over time, primarily as the people she is exposed to:

> Initially, when I started, it was just a job. I just needed a job, and I just took it.…But I think after having spent the time here and having spent the time in other spaces that are non-corporate, I think that what interests me are the people, because everybody obviously comes from a very different space. You know, the conversations are very interesting. It's not just about just the bottom line or just what's good for the company, you know, at least that conversation is not there.…So at least there's an alternative thought process somewhere, which is so hard to find. Like, we don't have it within our friend circle here. Even within our own friend circle, we have a great circle of friends, but you can never have an alternative sort of conversation. If you're together, it's always about, which apartment, which area is good to invest in, and [I and my partner] stick out very sorely in those sorts of things....So that's what I like about this [non-profit] space as a whole.

Ameya also considered the people he has encountered in non-profit work to have been one of the positive aspects of his job: "The kind of people that you meet here and through your work has impacted me very, very strongly….[In Jaldana,] I find that people are sometimes so invested in the idea of doing good to someone. Or the idea that they need to do their work seriously because it has an impact on others. That kind of conscientious decision-making, I

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haven't found this in software firms. The basis, the fundamental basis for decision-making is of a different kind there, which is why I always used to feel a revulsion towards that." While deliberations over employment are incredibly personal – defined by, for instance, seeking a much more refined landscape in which to refine one's ethical reasoning (Ameya), a respite from corporate work that offered opportunities for self-guided acts of creation (Rohan), working on social issues (Latha), or shifting power in society (Adil) – collectively these testimonies reveal a larger project that is focused on cultivating an upper-middle-class experience that is an alternative to the economic aspiring and consumption which now commonly characterize India's middle-class identity and practice.

These accounts suggest that for people like Ameya and Shwetha, one of the greatest benefits of non-profit labor is its ability to offer a kind of reprieve from the insularity of upper-middle-class social life and an altogether alternative class experience. Being "corporate" is thus hardly anchored to a corporate workplace or position, for the demands that corporate labor and upper-middle-class identity place upon personhood extend to one's life and consciousness as a whole. The problems with corporate work, thus, also quickly turn into problems with upper-middle-class sociality more generally. Relocating the idea of being corporate to the home, Shwetha reflected during our interview upon her own living community – one of many high-rise gated communities in the Sarjapur area of Bangalore (see Chapter 4) – saying "We don't have a diverse background at all here, within the community that we live in. They are all people like us. But the difference is that pretty much all the people we know are in the corporate space." She further offered both negative and positive examples of social peers within a home and social life defined by an enclave of corporate concerns. Describing a man who she considered a good family friend but one who

did not embody the outward, world-facing, critically reflective dispositions she had

encountered in non-profits, she said "he's sort of a great example of all of that, you know,

somebody who is very clueless. Like, he calls me a conspiracy theorist." Having worked for

his career at a large IT firm in Bangalore, Shwetha implied that the kind of closed-minded,

self-oriented thinking expected of one in corporate employment had permeated her friend's

overall outlook on the world, truncating his willingness to engage in conversations involving

critique, reflection, or debate. A conversation on the rights of Dalits, for instance, would

result in an immediate shut down via a joke or an accusation – "Oh, you're complaining all

of the time. What are you complaining about?" Shallow, class-insular concerns further

characterized the kind of discussions she encountered on neighborhood-based social media

platforms where the predominant concerns are about how much to pay the maid and

complaints about the paper boy not showing up even though much more important and

meaningful conversations could be had, such as about the acute water scarcity within their

neighborhood itself. Shwetha interpreted these dynamics as a larger lack or disappearance of

community that she had seen growing up – and the sense of belonging that being in a

community provides.

Conversely, Shwetha felt a sense of belonging when she could have extended and

highly varied conversations about the world, though there was only one person in her living

community, aside from her partner, who she felt entertained such conversations:

> [Belonging] is really about introspection and conversations with people, and
> that's I think the hardest part for [my partner]. We have this uncle [neighbor]
> who is the only person that [my partner] can talk to about a lot of these things.
> He's about 70 years old, and he literally treats [my son] like his own
> grandson. That's how we got to know him, and then slowly he and uncle
> started hanging out and Uncle's from a---. Like, he's been in jail, and he's
> protested in his youth, and he's been in theater, he's read books on

communism and he's like so well-read on any subject. You'd really love chatting with him also, he's a wonderful person. So, I feel like for [my partner], that's the only person he can talk to here other than when we talk. I feel bad. It's tough. The average person you meet is not interested in engaging on any other subject, you know?

Thus, shallow conversation and a general dismissal of social issues could translate into a thorough social isolation in which any kind of bonding is difficult outside of the home. Shwetha's critiques were particularly resonant for me, as we had conducted her interview in between several long, highly reflexive conversations and at her home, the very place which had inspired many of her critiques of corporate culture. The environment of her gated community was, I found, paradoxical. It was defined by architectural austerity and isolation from the outside world but was, at the same time, also quite lively. When I encountered the space, it was riddled with dozens of happily screaming, playing children (a birthday party was underway) and a few small groups of relaxed, amicable adults. Shwetha's children, aged seven and nine, joined the fray as they pleased while, like many other parents, Shwetha and her partner stayed inside. Throughout the afternoon, a steady but casual stream of friendly visitors came to say hello. During dinner, one such visitor talked at length about the Indian movement against Novartis pharmaceutical company to maintain affordable prices for cancer drugs. Afterward, Shwetha and her partner stayed up long into the night discussing technology (I left with a copy of *Cypherpunks* by Julian Assange which Swetha's partner had given me), their love for Chennai, and their rather unconventional relationship as a live-in, unmarried couple. I left their flat, exiting through the panopticon of the gated community courtyard and the security guard station, feeling as if their home was indeed a rare pocket of reflexivity and curiosity within what was otherwise a prosperous but uniform capsule of elite living.

Even though Shwetha reflected rather extensively on her experiences of social isolation in the highly insulated world of upper-middle-class sociality, it was common across interviews with Jaldana employees for people to bring up their friends or relatives. Larger social circles outside of work were sources of camaraderie for Jal Jaal workers, but this had its limits, as friends and relatives often did not understand how one could enjoy or see value in non-profit work or why one might have critical views on larger issues, such as the everyday moral degradations that go along with caste and class hierarchies. However, a sense of belonging and community that was based on varied worldliness and critical reflection, so often lacking in upper-middle-class social circles, could be found in a non-profit workplace such as Jaldana. Designated sometimes as merely "the people," exposure to an alternative upper-middle class – one whose upward mobility is more *moral* than economic – is often considered, among Jaldana employees, one of the greatest benefits of non-profit work.

In the field: Non-profit work as inter-class encounter

"The people," however, did not always refer to alternative class peers, but also class others, particularly those people, forever located in "the field," who are meant to benefit from Jaldana's development programs. Interacting with these people, too, was described as a principal benefit of Jaldala's non-profit work. Development subjects, and the villages they usually resided in, were sometimes described as rare and important demonstrations of virtue that stood in stark contrast to urban living, where virtue had been long forgotten. Adil, for instance, has consistently found inspiration from his interactions with development subjects, saying "You get hope and inspiration from those [field visits], really. Otherwise, it's all this development blah blah blah. You meet those people and, despite being in the situation that

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they are in they don't crib [complain]. Nobody has! Invariably. Unless they have been exposed to NGOs for very long, they will not crib. They are humble, they are warm – all rare commodities in urban [life]." Being humble and honest, interaction with villagers was also, for Adil, the truest indication of achievement for development projects (even if, as he implies, those projects themselves could have a corrupting influence on the virtue of villagers).

Ameya also understands the village as a rare site of virtue and one which can importantly teach outsiders a better, more moral way of being, though he takes these ideas even further than Adil by citing the village as the very location of development in its most advanced form. In discussing his hopes and ideas for national development in India, Ameya reflected:

> The best progress will be when people begin to be concerned about others, and they have a sense of fairness, they have a sense of obligation towards others, a sense of compassion towards others. That would mark true progress for India, which is there among the grassroots levels in villages. They don't have cars or a lot of money—Of course, now villages are shifting toward urban model, which is a great disaster for India, but in that basic backward, rural parts of India, you still have that basic concern for other human beings, a sense of togetherness, a sense of mutuality, a sense of basic fairness. What else do you need? That will mark true progress.

Such narratives underscore the idea that non-profit labor is, apart from contributing to the formal aims of development projects, fundamentally a project focused primarily on class in which non-profit workers can deconstruct their present and past class experiences and revise the sensibilities made available by it. This results in significant personal transformation and learning, and is dependent upon inter-class encounter in addition to an alternative upper-middle-class experience.

Personal transformation hinges, in part, on interaction with rural or development subjects, but it more so is about a larger inter-class encounter of going to the field where one is exposed to rural life in general, especially its social life and environs. For Adil, for instance, it is not only encountering virtues which are "rare commodities" in urban life, but he also references what he calls "the field" more generally as the place that holds the most potential for learning and personal growth. A brief field visit to rural Gujarat in his Forestry Management program was influential for him and directed the course of his professional trajectory toward non-profit development work:

> [F]or the first time, we were thrown into the bowels of central India. That is when we felt that, as a batch [class cohort], we almost got hooked to the idea that we should get back to rural development, and we felt that there is a lot of discrepancies between policies and the way it is affecting the recipients. So, we thought it may be a good idea to start with the grassroots, so I spent three years in a tribal village in Gujarat. … After that, I joined the organization which used to work in tribal areas, so that was when, in terms of learning, very first-hand learning about what development is not. A lot of unlearning takes place of what the formal knowledge system has driven into your head, and then you start relearning again.

Adil considered the opportunities made available by non-profit development work for un-learning and re-learning – for both himself and his family, who could accompany him on field visits – the true personal wealth of his non-profit career and of far greater value than the monetary wealth he could accumulate in a more corporate position. "The field" thus becomes a place where one is displaced from the city and one's normal social circles and exposed to other ways of living. This process could help one deconstruct the values and beliefs one has learned throughout life.

Field visits are not simply an added perk of NGO work to be passively enjoyed when they happen to occur, but Jaldana employees often invoke the processes of re-learning and

self-transformation consciously and with degree of choice. With his director-level position, Adil is able to manage his travels with more flexibility than other office employees, and he told me that he exercises those decisions with choice and according to his preferences: "So many of my friends ask me, at your age and at your [position], I mean, why do you need to do it [travel so frequently]? I say nobody tells me to do it, I just enjoy [it]. I mean that's where you learn the most and it's not just about learning, it is also what keeps you going." Ameya, though not a director, similarly invoked field visits to enhance the amount of personal transformation and learning one could acquire from them. While his visits to the sites of field projects were paced by formal meetings set up with partners, local government representatives, or beneficiaries that were scheduled in timing with a particular project task or development, he sometimes would use his position to bring others along with him who often did not have the opportunity to make field visits as a part of their Jaldana work, such as a newly hired accountant who had come to the organization fresh out of university. Ameya, himself valuing field visits an important opportunity for moral displacement and thus reflection, felt that it was also important that all employees have this opportunity for self-transformation and moral development which a non-profit development organization like Jaldana could offer – particularly for a person coming from a more corporately minded professional culture such as finance. Such individual acts of moral mentoring and socialization for new employees were not uncommon, though they did not always take the form of field visits.

While the inter-class encounter of visiting "the field" is often cited as the place or impetus where significant personal transformation begins, many Jaldana employees also frequently mention inter-class encounter as the measure of their personal change. These are

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moments that, to some, indicate how they have been positively changed as moral subjects outside of work and outside of the world of NGO do-gooding, and they are often observed in interactions with one's domestic help, such as for Latha:

> I think I've become much less self-centered. I've become much more sensitive to the fact that there are other people who are much worse off, and it really puts things into perspective…I think the way I've interacted with, say, my help has really changed from when I was in school. When I was younger, I just took it for granted. And not just my help, but a cab driver or a waiter, I think that has very much changed. I see that in contrast to people who, like my friends or peers or people I grew up with, their behavior hasn't changed, but mine has.

Interacting with domestic servants, often politely referred to as "the help," is a form of inter-class encounter often available from one's earliest moments (among the relatively elite Jaldana employees), though these everyday experiences of inter-class encounter hardly were thought to yield the possibility for personal transformation that working in a development NGO could. Rather, interactions with one's domestic help and dissonances with friends over material or intellectual interests *demarcated* personal change. The changes Jaldana employees like Latha and Shwetha saw in their treatment of their help were small but perhaps significant: they believed that they now, as employers of domestic workers, offered subtle, everyday gestures of respect toward cooks or drivers by trying to be more understanding during times of professed need when a small loan or time off was needed unexpectedly or by inviting domestic help to sit at places normally only reserved for family members (the couch, the dining room table). Such interactions offered perhaps the most intimate and repetitious juxtaposition with class peers – family members, close friends – who did not observe the same niceties. In the minds of several Jaldana employees, their relationships with domestic help and a normally subordinate service class was one place

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where they saw themselves as not only kinder, gentler employers or clients but also as living

out a more critical, flattened sense of hierarchy contrary to the one they encountered in

Indian society. (However, no one used our interviews or the Jaldana workplace to question

the deeper classifications on which the domestic servant-family employer hierarchy

depended or to discuss substantive gestures of equalizing status, e.g. through pay). A similar

observation of inter-class relations is reflected among Jaldana staff more generally, where the

"office boys," Shankar and Ravindra, are treated seemingly without degradation and can

attend organization-wide meetings as they please, but whose roles in the organizations

remain, it seemed to me over several years of involvement with Jaldana, subservient – fixed

on menial tasks and without the opportunities for advancement or promotion that other

employees had. The inter-class encounters, seemingly transformational as they may be to

Jaldana employees, seem to mostly serve the purposes of the larger class project many

employees seek in their lives at non-profit work – to better construct alternative ideas about

and experiences within an upper-middle-class status – rather than to displace themselves

completely from that status or to elevate others to it.

Corporate but Not: Positive imitations of corporate life

　　While Jaldana workers consistently framed their satisfaction of NGO employment in

negative reference to past experiences in corporations, it wasn't that the NGO was

impervious to similar dynamics. Conversely, many of Jaldana workers' most salient critiques

of corporate work culture were when they encountered it in the NGO itself. Rohan describes

what he sees to be the unfortunate growth of professionalism in the sector:

> There's so much funding that – and this is what I have realized about the non-profit sector – is that now it is full of professionals. And professionals who do what is being asked to be done. People who work on an issue because of the money. They get their salaries. Essentially if you think about a non-profit sector, it is a non-profit bureaucracy. And, bureaucracies are not very passionate about issues. … They won't stake a claim, they won't fight, they won't argue, they won't berate, they won't really put their foot down on a particular thing. They will have opinions, but they won't go beyond [a certain] point.

Ameya similarly found those seeking personal gain within non-profit work to be disturbing, even polluting: "Better to go work in a corporate, better to slog there and be a slave there than come here and then spoil the purity of the cause that we think is there. Because most of the bad things that happen in the social sector is because of people who [pursue material gain in the name of development]." Jaldana employees often deliberated about the limitations of NGO work and the morally profane values that they often saw upheld in the larger social world of non-profit work. Much of these hesitations came from an ongoing paradox at the root of Jaldana itself: while the organization could offer a shade spot to corporate modes of working, its proximity to corporate institutional forms and sources of funding perpetuate the very pursuit of personal gain, professionalism, and other values labeled as corporate among its employees.

Indeed, in its institutional structure and workplace culture, Jaldana resembles a corporate office in many respects, and it seemed like it was purposely constructed that way. Its CEOs were consistently hand-picked from corporate work environments such as finance and tech sectors. A board of trustees comprised of corporate executives gives scrutiny, approval, and ongoing consultation for each project pursued by the NGO, a process of evaluation and discipline that is mandatory for most employees throughout a given year. Similarly, employees, though having made the decision to migrate from corporate labor to the non-profit, were hired largely *because* of their

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corporate experiences, which were seen by Jaldana's highest levels of administration to offer valuable qualities in non-profit employees. For this reason, experience working in disaggregated teams and finance (Shwetha), corporate advertising (Latha), or sales (Rohan) were not merely stray details of personal histories but actively selected skills expected to be constitutive forces in the non-profit.

During our interview Jaldana's founder identified white-collar managerial skills as the most valuable to the non-profit, as opposed to experience in the water or development sector, and while corporations might have trouble finding the right talent for their employment ranks, Jaldana's founder said this was not a large problem for the NGO given its desirable work conditions:

> We try to make our jobs attractive enough so that our salaries are reasonably okay when compared to others. We cannot pay corporate salaries; otherwise, we would be spending all of the [philanthropic trust] money on ourselves, but we give decent working conditions. And I think one trend that I have seen over the years is that more and more professionals are looking for meaning and purpose in what they do. They're not just happy being in organizations that are looking only at the profit bottom-line. So there are people who are mid-career who are saying "What on Earth am I doing here? I'd rather be doing something more purposeful. I'm willing to take a cut back so long as it's not very deep and come for a few years and try to understand this and then go back." We've had that steady stream.

Job advertisements for Jaldana also express this awareness, as they specifically identify the workplace culture as the key perk to the position, describing Jaldana's work culture as personally enabling, flexible, and impactful for society. Fully aware of pockets of the upper-middle-class who have experienced some degree of prosperity within a labor market restructured by economic liberalization but who are disenchanted by its values, one wonders if Jaldana's founder and top directors consciously preserve the non-profit as an exceptional zone of professional labor to attract the employees they desire.

But hierarchy and subjugation, so scorned in Jaldana employees' memories of past corporate work, were certainly present in the NGO (as it likely had been present elsewhere in their social lives, given the prevalence of status inequalities throughout South Asian society). The happy sociality observed by many at Jaldana is merely overlaid on top of an institutional space acutely defined by hierarchy. During meetings, which often seem social in purpose and open to all, an overwhelming majority of comments and questions (85-95% at some meetings) are made by only the most senior members of Jaldana, which suggests that much of the organization's decision-making and discourse are dominated by those at the top. Similarly, the gregarious scene on the rooftop terrace during lunch is, usually, devoid of the same high-ranking personnel. (Lower-ranked staff also eat elsewhere.) Further, consultant employees who work outside of the office with temporary contracts were often assumed to be less valuable than office employees (and thereby less deserving of similar benefits). In-office employees subjected consultants to the very demands they had scrutinized in their past corporate workplaces: subjugation and demoralization. Several consultant employees characterized the atmosphere of Jaldana's office not as a carefree and friendly space but, rather, one defined by an immediate sense of exclusion and distrust. In these ways, certainly, the NGO offered a shade spot from the more intense subjugation to the internal operations of capitalism that employees had found in corporate employment, but those within the Jal Jaal team undeniably reproduced and retained many aspects of corporate work culture as well.

One vector by which the continued influx of corporate values seemed to be ensured, consciously or unconsciously, was to hire, as Rohan called it, "professionals," who already retain many of the values found in a corporate workplace. For some, corporate experience or

professionalization made workers more efficient than those who relaxed into a slower pace of

work permitted by the non-profit, as Shwetha described:

> A lot of people come into this NGO space, because it offers a break from the corporate. There are no deadlines, it's a laidback atmosphere, and I think that's the problem with the NGO. It's one thing to say that it gives you the space to do a lot of these things, but at the end of the day, what is your accountability towards the issue? Forget about your accountability towards the organization, where is your accountability towards the issue? If you're so passionate, what are you trying to do? See, a lot of people glide by. Within [Jaldana] itself, there are a few people who are extremely motivated, who really feel strongly about things and are doing something about it, but there are so many others who just glide by.

Despite its comparatively laidback atmosphere, accountability measures and

professionalization steadily acquired new importance within Jaldana. After numerous people

left the organization in protest of the more corporatized work culture, new management took

advantage of employee departures to downsize certain work teams. Downsizing began as a

kind of moral contusion (as protest against professionalization) but was experienced in many

ways. Latha was left with a sense of placelessness and isolation when there had previously

been a big team and "a lot of buzz and activity just in the office because of the physical

presence of dedicated people." Now that no one worked on her team full-time and she too

was scattered across projects, she was left with an ancillary role in Jaldana with no single

team to work on and without a space filled with close, actively collaborating co-workers.

This placelessness and isolation seemed to remove much of the daily enjoyment from her

work. Alternatively, Shwetha experienced the downsizing through increased responsibility,

having been given the role of a manager, but without the title or salary that had previously

corresponded with those of management. These changes happened sometimes slowly and

sometimes in the upheaval which resulted after the sudden departure of an employee.

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However, it was at these times when the labor contract at Jaldana tacitly began to change to include many features of corporate work that employees had sought to escape from their former professional positions.

Discussion: Shade and sun spots of capitalism

Critiquing and revising one's everyday labor arrangement and one's life at work is a nontrivial place to start critiquing and revising one's relationship to capitalism as a whole. Though much emphasis is placed on conscious consumerism and outside-of-work activism as potential means to counter capitalism's continual degradations to natural and human life, waged work is the primary site where most people produce capitalism's products, experience and perform inter-class relations, sell their vital energies in exchange for salary, and submit those energies to the productive time cycles determined by the workplace. Here, I follow Kathi Weeks' theorization of work as a fundamentally problematic social institution, for it is waged (or salaried) work that consumes the majority of people's lives, where people become classed, are rendered usable for capitalist objectives, and endure their most formative adult socialization (2011). Indeed, "waged work remains today the centerpiece of late capitalist economic systems; it is, of course, the way most people acquire access to the necessities of food, clothing, and shelter[42]," and for many people, working constitutes the bulk of living itself (Weeks, 2011, 6). More than acts of consumption and object exchange, which are often fleeting, work is also perhaps the most immersive experience of capitalism that many people have.

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[42] Either from one's one work salary or on the basis of another's earnings.

The narratives about past and present work of those who are tasked with fulfilling the development aspirations of Jaldana reveal that they are often deeply critical of the power of work to re-shape them as citizen-subjects and to implicate them in the larger tasks of capitalism and India's ongoing economic liberalization. Jaldana employees are, fundamentally, seeking what Weeks would call better work, and by doing so they are also seeking a better life, for at least the majority of life that is spent at work.

To illustrate the often unspoken demands made by Jaldana employees upon labor, I rely upon a hypothetical parable offered by Marx (and used also by Weeks) meant to demonstrate the deceptive nature of the labor contract made within capitalism: Two men walk into a marketplace, one seeks to sell his labor and the other to buy it seemingly as equals in an act of mutual exchange. However, once his labor is sold, one of the men is subjected to under-valuation and other forms of subjugation while the buyer of labor profits from this exchange. The two men thereby exit the marketplace not as equals but in a relationship of acute power and status difference. It is clear that the same tale would need several contingencies before it could fully describe the demands Jaldana workers have made of the work. Namely, upon looking to sell their labor outside of the corporate job market, workers placed specific conditions on the sale of their labor by refusing to concede certain standards that would render them inferior (e.g. through subjugation, meaningless or overly simple work tasks, a/immoral labors).

In the case of Jaldana, this exchange is occurring within the capitalism of a liberalized 21st century India. The individuals partaking in it occupy the most elite tiers of class and caste and many of them have been able to secure employment positions highly desired by (but usually inaccessible to) many other segments of the Indian middle class. Indeed, these

individuals are among the group seen as setting the standards for middle-class comportment

and aspiration in post-liberalization India. Just consider the following two excerpts from

Fernandes in her research on changing class dynamics in India. The first is from an

advertising professional:

> We have two distinct [target] groups. One is the yuppie, and the other is the
> puppie, the Punjabi urban professional, basically the second generation
> businessman trader. The businessman trader whose businesses are booming. If
> you look across [the street] over here you see all of these camera shops. The
> guy who sold me this lens he's not got a very large shop. He'll be making 50
> times what I make. This is bought in cash. It's smuggled into the country.
> There's no paper tracing this. It's a cash payment. He's got more money than I
> can ever dream of having. This is his father's business. His father they are
> goris [caste group], they are traditional people, he is young, he's hep; coming
> back to the point exposure to television, exposure to western lifestyle. Where
> does he get his aspirations from? These people lack, let me use the word
> "class" [sic]. The people who set the trends the people who set the values are
> the educated middle class. They give a brand respectability. They make a
> brand a thing to be seen with. (Fernandes 2006, 67).

The second is from a journalist who describes some of the cultural shifts since economic

liberalization:

> [Liberalization] has redefined middle class ambition…. If you're a Citibanker
> or if you're with Am Ex [American Express], if you're with Bank Am [Bank
> of America], then you're hot. You're not considered hot property if you're
> with SBI [State Bank of India]. You won't go to one [a state bank to look for
> employment]. Look at the profile of the brighter students and the kinds of jobs
> they will seek, where they are going. Where will the IIM [Indian Institute of
> Management] students go? Where will the IIT [Indian Institute of
> Technology] students go? Just look at that and you'll know. (Fernandes 2006,
> 89).

But unlike many portrayals of the new middle class in India, both scholarly and popular,

those at Jaldana are not seeking upward economic mobility. Their concern is, rather, a kind

of moral aspiring. Granted, Jal Jaal employees can afford to set aside economic aspiration, it

seemed to me, when many others in the middle class cannot. Many employees live in high-

priced gated communities or other exclusive settlements. Nearly all own cars, and some

employ a professional driver among their household staff. Yet, the mobility to which they

aspire, more moral than economic, appears similarly difficult to acquire in the labor market

as liberalization continues to restructure the jobs which are available, their status, and the

expectations for middle-class comportment. In this context Jaldana acts as an occupational

reserve for those few elites who resist liberalization's remapping of class identity.

As such, Jaldana, and possibly similarly elite development or philanthropic

organizations, offer what I call a "shade spot" within capitalism that gives employees refuge:

from degrading corporate work environments, from the central roles they might play in

capitalism if they worked for a corporation, and, perhaps most importantly, from an upper-

middle-class identity increasingly defined by consumerism and corporatism. I consider the

non-profit work environments to be shade spots, because the characteristic motivations and

mechanisms, such as profit, that comprise corporate capitalist enterprises and new middle-

class identity are either absent completely or greatly diminished. Like one finds in the shade

on a sunny day, the pressure and the heat from the sun (or liberalized capitalism, in this case)

are lessened, and one can relax a bit. The non-profit organization is not locked into a need to

create profits on the basis of employee wages and selling products or services as a

corporation would be. Further, the long hours, time clock, and discipline characteristic of

corporate offices are not present in non-profit offices such as Jaldana. Neither are the

expectation of advancement, promotion, and cut-throat competition that many found in their

past corporate jobs or among their private social networks. This reprieve from corporate

labor and its values offers what seems to be seemingly life-changing opportunities for

retrospection, experimentation, and sociality. Even if this project is largely confined to

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economic elites and likely much more limited than some testimonials suggest, non-corporate development (or social sector) work may just prove to be the most substantive benefit tech sector patronage may offer.

However, like a real shade spot that is created because of the sun and is most desirable on very sunny, hot days, the shade spots of development donor organizations are acutely dependent on mainstream, corporate capitalism to exist in the first place. Corporate Social Responsibility (CSR) departments, for instance, sustain constant and direct relationships to corporations: CSR organizations are often corporately funded, staffed, housed, and their operations act as a brand vehicle for the company – or patron – in areas of society that would otherwise not be reached by the corporation (and in the form of amicable brand narratives crafted around concepts of charity, nation-building, and social welfare). For some CSR departments, development or social work is quickly promoted to enhance the brand value of the larger corporation. Likewise, Jaldana and donor organizations like it similarly depend upon a continued, direct relationship to corporations, albeit a different one, as they derive their funding from the annual returns on large investments. In this case, Jaldana's existence is sustained by the wealth accumulated from IT sector corporate profits. Donor organizations, no matter their institutional form, are usually overseen by a board of trustees, almost all of who are corporate executives or consultants.

While the highly exclusive and hierarchical dynamics commonly found in corporate workplaces is an instantiation of class power (and its degradations) which permeates society, so too is Jaldana but in another form. As they resist the manners in which economic liberalization restructures middle class employment and identity, Jaldana employees have not been thrown to the margins of capitalism (and its current iteration in India), as others have

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(see Giorgi and Pinkus 2006). They have, rather, found a shade spot, in their work positions at Jaldana. In a way, Jaldana operates as an inversion to spatialized notions of Giorgio Agamben's "state of exception" (Agamben 2005). Rather than a state in which the rule of law is suspended, supposedly to benefit the public good, and the most vulnerable and undesirable citizens are stripped of their humanity (rights, dignity, lives), Jaldana is the reverse. It is a space where larger neoliberal economic transformations (shifting expectations of class, labor restructuring) are placed on hold so that some of the most privileged citizens can more fully explore their humanity.

At the same time, Jaldana employees are hardly immune to the very corporate forces they profess to have escaped. They often willingly uphold and subject other employees, especially those with less standing, to corporatizing values within the organization. Accordingly, workplaces and work cultures like those at Jaldana are produced through a continuous dialectic between ideas and memories about what is and is not corporate. Even though that which remains at the end of those constructive processes is not always wholly non-corporate, the non-profit remains a place where one can relax into work and, in relaxing, be more human. While non-profit workers may define themselves and their work lives as post-corporate, they may continually draw upon the corporate workplace as a formative force, both to negatively and positively constitute their present work practices. It is, after all, merely a shade spot.

Conclusion

In this dissertation, I have traced the politics of what I introduced in the first pages as "a curious new configuration within contemporary development." I have often referred in short to this configuration as 'tech sector philanthropy,' a phrase used to signal several key pieces within this configuration: high-tech corporations and entrepreneurs or their families who have been attributed a celebrity that is both moral and economic on the basis of their success in a post-liberalized global economy; flows of distinctly private wealth (individual, family, or corporate) that are deployed, at least in name, in service of development goals through the institutional shells of NGOs or CSR programs; the digital platforms, marketing and awareness campaigns, and educational programs designed to enact a development which is meant to occur through the transfer of information or knowledge. While this configuration exists throughout international development the world over, albeit in different forms, I have focused on Indian tech entrepreneurs and companies acting in reference to Indian national development. India, at once a nation that is today synonymous with high-tech education and labor of all tiers and also a nation that receives some of the most acute development investment in the world, has been an important national context to research these issues.

But this is not the first time engineers or technocrats have emerged as key symbols of national development, in India or elsewhere. Scientific nationalism has threaded throughout many political philosophies in India pre- and post-Independence. For the latter half of the twentieth century, civil engineers and large public works, quite often dams, were key symbols of nationalism and development. These symbols, which were deployed en masse in documentary films, state discourse, and popular media, were meant to depict not only national progress and prosperity but also the state's capability to achieve and oversee such

progress. During this earlier era, the engineer was a key piece of this development narrative, for the civil engineer enabled the technological achievement on which national progress could stand. But at the same time, and also in keeping with middle-class values of the time, the engineer played a role more marked by service and humility rather than material wealth or celebrity.

Today, a new scientific nationalism reigns. Prompted by economic liberalization and the transformations to economy and culture which have followed, the cultural values of the present moment no longer point to state institutions as sources of honorable vocation or beacons of national development and economic prosperity but to the global market and the many corporate houses that engage with it. It is within this new cultural and historical context that the Indian high-tech sector and its particular exemplars of success have emerged as not only wealthy businesspeople but moral celebrities, political appointees, self-styled development visionaries, and patrons of privatized development ventures.

The historical contrasts between the engineer-hero of the mid-twentieth century and the engineer-hero of today make clear that the operative narratives and moral discourses surrounding national development have fundamentally shifted over the several decades. In this dissertation, I have taken one terrain within these larger economic and cultural shifts – that of tech sector philanthropy – to investigate who is involved in these new politics of national development and scientific nationalism, how, and to what effects. As this dissertation has illustrated, behind the short label of 'tech sector philanthropy' are a vast range of institutions, actors, ideologies, subject-positions, and forms of capital. The politics of Indian high-tech development philanthropy hinge first on the emergence of a new kind of political figure – that of the politically inclined or philanthropic high-tech entrepreneur – who

utilizes private wealth, wide access to the public sphere, and, sometimes, formal political appointments within or in association with the state to advance particular values or notions of national development and social citizenship. Using the examples of Sam Pitroda and Infosys executives (see Chapter 1), I have shown that the emergence of this figure, the tech entrepreneur-turned-moral-celebrity who has, in the cases that I have examined, been at times granted significant access to processes of municipal and national governance, has been intimately tied with economic liberalization. Ongoing processes of economic liberalization have created or amplified the various forms of capital – economic, social, and cultural capital in particular – that tech entrepreneurs and institutions call upon as they frame themselves as benefactors of development in various realms. Though the members of this elite class often denounce patronage as corrupt, philanthropists from the high-tech sector nonetheless become the face of a newer iteration of patronage on the basis of a moral idiom, that of the tech entrepreneur-hero who saves the nation by bringing India into global market dominance, a mythic repertoire that simultaneously extols various aspects of liberalization as important life virtues and likens business success in a global market to qualifications for political rule.

Discourses that celebrate the purported heroism of the tech industry, its institutions, and entrepreneurs are hardly benign – they are often deployed to naturalize the political missions and influence of a select class of technocratic billionaires – but I have shown that such mythic discourses are quickly unraveled by ethnographic and structural realities. These mythologies are infused with themes of diminishing state power and functionality, a discursive arc voiced also by many development organizations studied in Chapter 2. Yet it has been the state, as it has enacted specific policies at various levels of governance, that enabled the rapid expansion of the Indian high-technology sector and its continued place of

privilege within many realms of policymaking. Similarly, across examples of programs

featured in this research (see especially Chapters 2-4), no matter how often the state is

discursively cast as weak or malfunctioning, various state compartments are still treated as

the ultimate body to influence or derive support from – gestures that conversely reinforce a

view of the state as functional, relatively strong, and well-endowed with resources even as

those very discourses prime interactions with the state for political influence by philanthropic

entities. Institutions associated with the tech sector are common funders of development

programs that operate primarily through digital technologies or information dissemination,

but this field of development (techno)media is further supported by many other institutional

actors as well (see Chapter 2). Philanthropic figures from the high-tech sector, and the private

capital they have invested in development ventures, are hardly the singular or principal forces

for development that many mythic discourses would suggest.

In the chapters devoted to analyzing particular development programs (Chapters 3

and 4) that are infused with capital, staff, and branding of the high-tech sector, one sees that

the decisions, values, and strategies of particular individuals often play a key role in how a

given program is staffed and realized. In the first example analyzed (Chapter 3), a web portal,

I showed how a program may be motivated by utopic imaginaries for digital technologies to

solve pressing development problems, yet depend, in its execution, wholly on the interests

and ideologies of individuals charged with the program's management. Similarly, because of

the short-term nature of projects or high rates of staff turnover, a given technology (web

portals, in this case), though initially imagined to be world-saving, may be conceived by the

organization according to completely different values, media, and administrative procedures

just a few years later. In two subsequent examples (Chapter 4), I showed how two CSR

programs are designed to strengthen the public image and access to water of an IT corporation but are heavily molded according to the values and strategies of the NGO-consultants who were charged with executing the programs and designing their materials. Across these three case studies, the programs are often hoped to benefit all strata of society, yet they have so far been largely confined to highly elite audiences. In a final example (Chapter 5), another web portal, I showed how one needn't only travel to the sites of a development program's interventions to assess its politics but that the day-to-day workings of a philanthropic trust is also revealing. In this final ethnographic example, I showed how values for better life-at-work may conflict or at least operate in tandem with the values of a philanthropic organization and its development programs. Perhaps more importantly, I also showed that better life-at-work, a moral project that many of my research participants found meaningful, was perhaps the most significant and lasting benefit conferred by the development programs studied.

Taken together, while the many pieces of this study do call attention to the political significance of a new patron who seeks to redirect national development, this research also encourages us to look beyond charismatic high-tech entrepreneur-philanthropists and toward the people who are tasked with the day-to-day labors of the interventions at hand as well. The several case studies examined in this dissertation show that development projects often take quite a different shape from how they are initially proposed and that the staff within a given development project, especially those individuals in key positions of decision-making, influence the project's trajectory and its operative conceptualizations of development justice, information or knowledge, and social citizenship much more than the philanthropist or patron who proposed or funded it.

Even so, questions about the political power and influence of entrepreneurs and companies from the Indian high-tech sector should not be whole-handedly dismissed. Today over a billion Indian citizens grapple with a newly mandated biometric identification and banking card, the Aadhaar card, that was proposed and designed by one such high-tech entrepreneur-philanthropist. Many socially vulnerable people, particularly those identified as Muslims and immigrants, are finding themselves stripped of their citizenship and the many rights it confers as current government authorities execute Aadhaar's complicated registration process and its many documentation requirements. This instance alone shows that the forays of tech entrepreneurs into national development are not without significant social casualties or impact.

Indeed, the constant campaigns of philanthropy, government involvement, and public appearance that serve to promote the "brand" of select high-tech patrons and their ideologies for techno-informational citizenship, at minimum naturalize the actions of such figures in municipal and national politics. But they also create salient structures of work, development intervention, and formal policy that impact many people. At the level of discourse, mythic stories that feature tech companies or individuals as virtuous heroes are key narratives in shifting nationalist discourses whose rhetorical touchpoints revolve around the proliferation of modernity, the "diminishing" state, and a booming new globalized economy in contemporary India. It is important to recognize that such narratives are not honest reflections of social realities – the actions of the current national administration under Prime Minister Narendra Modi clearly show that state power is being pushed and exerted to wholly new levels. Rather, discourse that disparages the state and places high-tech idioms at the

forefront of national leadership are strategically used to petition for access to and influence upon state machinery by private interests – and to legitimate that access and influence.

While this doctoral research has focused on examining several instances of private philanthropy and Corporate Social Responsibility of two well-known entities (one private citizen philanthropist and one company) from the Indian high-tech sector rather than the formal appointments or policy work of high-tech patrons within the state or the deployments and consequences of mythic narratives about the Indian IT sector, all of these operate in tandem. For instance, appointment to a government-sponsored planning committee may lead not only to tech-sector patrons re-envisioning many aspects of society but also to direct private or public financial investment and even a political appointment to realize particular policy items and objects those private patrons desire. Or private spending by a philanthropic trust on a social problem is transformed into experience or a kind of track record on which future political appointments or liaisons can be formed. Along the way, mythic narratives help legitimize these processes. Future scholarship could thus improve upon this research by widening the lens of analysis to include these multiple tracks of cultural and political influence so to better understand how they interact with one another and how they may be intentionally deployed to gain power and influence.

Perhaps even more important than raw assessments of the political power and influence of those from the high-tech sector is an understanding of who is impacted by these new developments and how. Based on the programs studied here, the new patron from the high-technology sector seems to be a patron in search of a client or, in other words, a patron whose goods do not materialize from requests from or a relationship of mutual dependence with so-called clients. Indeed the most voluminous "gifts" of this patronage system are

granted to elites, such as the English-speaking graduates of elite universities who seek a more fulfilling life-at-work discussed in Chapter 5, the large corporations and the residents of high-rise luxury apartments discussed in Chapter 4, and philanthropists themselves who look to philanthropy or statecraft to nurse a number of intentions. While future research could place itself in the context of those often rather vulnerable groups who are ultimately described as the intended beneficiaries of philanthropy in order to better assess what benefits are actually brought to them, the sites of this research have suggested that the goods (or good) conferred by an emerging high-technology sector patronage, though it claims to be world- and nation-saving, do(es) not travel far. Further, in this system of patronage, in contrast to many other kinds of patron-client dynamics, the patron here reserves exclusive control over the usually universal projects of envisioning and designing the future.

APPENDIX A
"Knowledge for Development" Organizations in the Indian Water Sector

Study Design

Study questions:
1. What constitutes knowledge or information in "knowledge for development" programs, in terms of format, content, framing and messaging, and dissemination patterns?
2. Who participates in these projects and how?
3. Why is knowledge deemed so important for development or social change? What kind of information is selected for achieving development goals?

Goals of study:
1. To survey the larger field of knowledge and information dissemination in the water and sanitation sector in India to describe what is being done under the purview of knowledge dissemination, how it's being done, to what (reported) effects, and the investment required to maintain such initiatives.
2. To determine the extent of tech institutional (corporation, trust, etc.) participation in or influence on the field of knowledge for development.
3. To derive best practices, unique or outlier strategies, and make suggestions for these initiatives and those similar to them (requested by participants).

Sample size, selection, and characteristics: 30 programs (across 28 institutions) whose primary contribution to development and societal improvement is the dissemination of knowledge.

Organizations were selected on the basis of a snowball sample selection method in which participating organizations suggested other organizations whose work they respected or had heard of. I contacted a total of 73 organizations for inclusion in the study and was only able to include a total of 30. (Forty-three organizations did not respond or were unable to arrange interviews in the time frame of the data collection).

Media/Platform Type	*Topical Focus*	*Dissemination Modality*	*Geographical Focus*
▪ Web portals (7) ▪ Project management software/dashboards (2) ▪ Mobile phone radio platform (1) ▪ Resource mapping projects/apps (2) ▪ Internet/software provisioning (1) ▪ Film (2) ▪ Education program (1)	▪ Water (20) ▪ Environment (6) ▪ Current news/ political thought (4)	▪ Online & offline (8) ▪ Online (14) ▪ Mobile phone (1) ▪ Offline (7)	▪ India (22) ▪ South Asia (4) ▪ International (4)

- Community-based
  projects (5)
- Alternative media (5)

Methods: One ethnographic interview with 1+ program manager(s), director(s), or founder(s) as well as targeted media analysis of each program's knowledge/information platforms or materials.

For each program studied, I have collected data on organizational context and history, information shared/content (emphases, creation, editorial processes, formats), audiences and circulation patterns, contributors, technical analytics, required resources (budget, staff size), and definitions and measurements of success.

Interviews were completed between October 2014 and August 2015. Each was conducted in person at the location of the project office with the exception of four interviews, two of which were held over Skype (for one organization whose offices are located internationally and for another whose program manager's frequent travel schedule made an in-person meting difficult) and two of which were held at a restaurant (in the cases where there was no program office).

List of initiatives by content type (names are excluded):
While these organizations vary widely from one another, they all focus on information or communication as their primary contribution to development or social welfare.

<u>Knowledge Portals</u>
1: A national knowledge portal formed in 2008 in response to a recommendation made by the National Knowledge Commission (NKC)[43]. The portal focuses on biodiversity using a geospatial approach (maps and various ecological layers), and it features message boards, topical groups, and detailed pages listed for different species. English.

2: A national knowledge portal formed in 2009 in response to the NKC's recommendations, which focuses on climate change. The portal features research articles and blogs written from the perspective of a government watchdog. English.

3: A national knowledge portal formed in 2006 in response to the NKC's recommendations, which focuses on energy issues. The portal is no longer operational but was overseen during its tenure by a research and education institute that specializes in energy research. The portal featured comprehensive, accessible guides to different aspects of energy sources and technologies, which were written by academic specialists. English.

4: A national knowledge portal formed in 2006 in response to the NKC's recommendations, which focuses on environmental issues. The portal circulates official statements, documents, peer-reviewed research papers, and news articles much like an online library. English.

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[43] The National Knowledge Commission was a small policymaking group that functioned within the Government of India between 2005 and 2014. It issued wide-ranging recommendations for restructuring aspects of Indian society to become a leading "knowledge society" of the 21st century.

5: A national knowledge portal formed in 2005 in response to the NKC's recommendations, which focuses on water. The portal features news roundups and references, original feature articles, videos, photographs, datasets, data tools, research papers and manuals, questions and answers, and a calendar of sector events. English, Hindi, and Kannada.

6: A national geospatial portal on water supported by the Ministry of Water Resources. Established in 2009. English only at the time of research but with Hindi, Urdu, Bengali, Punjabi, Gujarati, Marathi, Odiya, Tamil, Telugu, Kannada, and Malayalam translations added in 2015.

7: An international set of portals which focus on providing accessible information about technologies for development field projects in water, sanitation, health as well as portals for project finance and sustainability. Designed as a Wiki page and created in 2007. English, French, and Spanish at the time of research and Hindi and Malayalam translations added in 2015.

Project Management Software/Dashboards
8: A publicly available online platform designed in 2004 to amass funding from different sources and to allocate it among projects determined by peer-review process conducted by water experts working in field development projects, academia, and other roles. Also for reporting project progress, once funded. English, Spanish.

9: A publicly available project management dashboard designed in 2007 for both implementing organizations, who report on and track project performance and progress, and donors, who can monitor their philanthropic investments in development projects.

Mobile Phone Platform
10: A mobile phone platform which streams news, advertisements, and user-uploaded messages (e.g. news, announcements, songs) along several channels (since 2008). Hindi, Odia, Urdu, other local languages (within Jharkhand, Bihar, Orissa, MP, UP).

Water Resource Mapping
11: A tool that visualizes water quality and scarcity across India based on data contributed by various government departments. Designed by several corporations in 2012 for their own use but made publicly available. English.

12: A participative mapping project (since 2014) that seeks to visualize groundwater in a localized area to heighten water levels, encourage water conservation, and manage the resource.

Internet or Software Provisioning
13: An organization (since 2003) that features annual awards for ICT4D initiatives, "last mile" connectivity programs, digital resource centers, software for artisan design and marketing, website design for NGOs. Its programs are established in India, South Asia, and Africa. English and other languages as needed.

<u>Film</u>
14: A video messaging program (since 2009) which trains production and editing teams to produce films on various development topics, which are then shown to women's self-help groups. Film messaging, which is determined by a board comprised of international scientists and regional NGOs, is closely monitored for its adoption rate among audiences in India and Africa. Local languages.

15: An annual international film festival on water (since 2005). English and other languages.
<u>School Education Program</u>
16: A competitive school project on environmental sustainability (since 2010) for students of Class 4 through university across India. Awards and ongoing mentoring in environmental education are given to schools with the top submissions. English, Hindi.

<u>Community Projects/Organizing</u>
17: An organization that compiles policy recommendations, organizes national conferences, and acts as an intermediary in stakeholder dialogues for water issues across India. (Since 2000.) English, Hindi, regional and local languages as needed.

18: A project-based organization working on various issues within water and sanitation in South Asia since 2001, which has also created a training program for engineering students and an online water technology portal. English, regional, and local languages.

19: An organization which focuses on river restoration and rainwater harvesting as well as media and educational programs on the same topics for school children and journalists. Formed in 1983. Hindi, English, other regional and local languages.

20: A consortium of development organizations and scholars that has researched and published on water conflicts and their resolution in India since 2007. English.

21: An organization that focuses on installing and managing wastewater recycling systems and training others to do so. Registered as a non-profit in 2005, the organization conducts trainings in India and internationally. English, Tamil, Telugu, Kannada, Pashto, Nepali, and other languages as needed.

22: An organization formed in 1999 which focuses on citizen science, specifically training non-academic citizens and development practitioners in hydrogeology and managing groundwater and springs. English, Hindi, Marathi, and other regional languages as needed.

23: A network of many organizations which work on centralizing rain-fed agricultural practices in government policy (since 2007). English, Hindi, regional and local languages.

<u>Alternative Media</u>
24: A magazine and blog that offers critical perspectives of dams and water management in the South Asian region (since 1998). English.

25: A consortium of journalists across South Asia who have been trained by an international development organization in their coverage of water, sanitation, and hygiene issues. The training program began in 2011 but is now nonoperational. English, Urdu, Tamil, Sinhala, Bangla.

26: An internationally focused environmental magazine with print (since 1992) and online (since 1996) editions. English.

27: A website featuring investigative and citizen journalism about urban issues within the city of Bangalore, which occasionally prints city guides. Since 2008. English, Kannada.

28: A website (since 2009) which publishes stories of positive news or impact across India as well as articles featuring city highlights (restaurants, day trips, hidden places). English. Hindi.

29: A cultural and political commentary blog (since 2004) that focuses on South Asia. English primarily but welcomes submissions in any regional language.

Media Synthesis & Analysis
30: An organization which synthesizes and analyzes news media daily for its coverage of environmental issues. It disseminates its news highlights and analyses directly to the Government of India and publicly. The organization has been functioning in its capacity since 2000 and within a larger network and government policy that commenced in 1982. English.

Content

	Format(s)	*Messaging*	*Dissemination Models*
Knowledge Portal *(Content)*	Varies per portal but includes: Articles, reports, maps/GIS layers, discussion boards and Q&A fora, news and policy summaries, data, blogs, introductory or how-to guides, case studies,	Scientific findings, government rulings or policies. Species and habitat descriptions and photos with options to discuss and upload further information. Geographic distributions of species, soil types, climates, etc. across India. Government-critical commentary on climate change. Comprehensive introductions to various energy sources and technologies with an emphasis on sustainable energy.	All information is located on an Internet-based web portal. Audiences come and read/see everything on the portal or an accompanying platform, such as YouTube. Some portals have attempted to connect offline users by sending cds of data, print magazine versions of portal content, or creating a physical computing site where people can come to download data.

	video	Human-focused stories on water within the frame of national development. Maps of water resources and projects from government data. International development reports and papers on water technologies and management methods modified into a DIY, Wikipedia format.	
Project Management Software/ Dashboards *(Content)*	Project proposals, project metric/data updates, project reports	Online communications structure is provided and filled in largely by users. One encourages peer review of water and sanitation project grant proposals by other development practitioners and another encourages ongoing project monitoring through reporting on progress toward project plan and goals.	Same as knowledge portal – everything located on one Internet-based platform – but with member NGOs uploading updates and photographs on a frequent and ongoing basis.
Mobile Phone Platform *(Content)*	Voice recorded public service messages, ads, songs, community messages	Recordings by users that uphold the organization's editorial policy (same as radio), information campaigns on development (from international organizations and government), and market surveys.	Mobile phone – users call, hang up, and the platform automatically gives a call-back free of cost. Users can choose from several themed channels to listen and record to. Also publish one page of platform content in a local Hindi newspaper each week.
Resource Mapping *(Content)*	Maps, 3-D visualiz-ations	Water scarcity, quality, and risk across India. Groundwater availability and fluctuations in Eastern Bangalore.	Internet website with the option to upload data on water use to generate reports about water risk. In-person visits to residences within the map area, conferences, and website.
Internet or Software	Computing technologies	Training people to use technologies or to manage	Vary by program:

Provisioning *(Content)*	(software and hardware), information portals, awards ceremonies	computing resource centers. Celebration of ICT4D approaches to development with awards. Otherwise, little messaging beyond the provisioning of software and hardware and overall promotion of ICT (information communication technologies).	All information or technology is available in one location (a physical computing resource center or Internet portal), and users come there for use. Software and/or web design services are given or sold to a small group of people for occupational use. Public awards ceremony and nomination phase.
Film *(Content)*	Film (8-12 min for one, shorts to feature length for another)	Success stories and how-to information for best practices in agriculture and hygiene as determined by an international scientific committee and filmed by a local film production crew. Critical films on water development and infrastructure, art films on water, community- or student-made documentaries.	Shown at rural women's self-help group meetings with a low-cost, portable projector. In-person survey and online tracking to monitor reception and impact of films. Annual film festival held in Bangalore with, sometimes, select screenings of festival films in other cities in India or internationally.
Education Program *(Content)*	School project (essays, mapping, water testing)	Calculations of water use and availability in school and surroundings, integrated understanding of water uses and sources, water conservation	A 3-month school project for which the best submissions are given the award of a celebration/ education weekend and, for the school's teachers, 2 yrs of support for developing a sustainability curriculum.
Community Project/ Organizing *(Content)*	Training/edu cation programs, knowledge or social networks,	Integrated water resources management – using the basin as the unit of organization for policy and planning. Cooperation between various	Varies by content format: The development project: a combination of research and implementation of a development intervention

	development projects (action research, implement-ation), stakeholder meetings, reports, videos, policy recommend-ations, conferences	stakeholders (government, non-profits, occupational groups, members of community/beneficiaries, multilateral organizations). Socially-minded training in water issues for engineering students. Water conservation, rainwater harvesting techniques and paradigms, river cleanups. Water conflict documentation and resolution. Wastewater treatment – technical implementation, trainings, plans for towns and cities. Citizen hydrogeology and demystifying groundwater. Rain-fed agriculture methods and systems – technical understanding of making rainfed agriculture work and promoting the overall paradigm of rainfed agriculture for public policies and agricultural practices.	at a given site and upon a given population. Training and education programs (1-30 days), either with audiences coming to the training or the organization traveling to the audience. Sending information or coordinating action/ research throughout a network of member organizations. Peer-reviewed publication in journals. Newsletters to donors and partners. Traveling or on-site media campaigns (*yatra*) or festivals (*mela*). On-site museum of implementable wastewater management systems.
Media *(Content)*	Articles (news, inves-tigative), media analysis, videos, how-to guides, critical essays, editorials	News and analyses critical of large dams and water policies. Human-interest articles on a water difficulty. Critical environmental news and analysis. News critical of urban developments, descriptive information on city, and tips on bureaucratic processes in	One or a combination of the following: Internet website and/or blog. Printed in popular newspapers and magazines (as freelance pieces). Printed magazines or books, available for sale and/or subscription.

		Bangalore.	Newsletters.
		Positive stories with an impact on a community.	Peer-reviewed journal articles.
		Critical political and cultural commentary in essay form.	
		Content analysis of mainstream media portrayals of environmental issues.	

Audiences

Because organizations tended to know very little about their audiences save for a few programs that operate highly personalized information dissemination, I include here only the characterization of each initiative's audiences by the organization. Not included here are the responses to questions about audience uses and interests in the information or technology they are exposed to through the initiative/organization (as it is highly speculative) or the degree of audience research conducted and audience feedback given (as these were not uniformly or always openly discussed).

	Who are audiences? *(according to organization)*	*Audience interaction*
Knowledge Portals *(Audiences)*	Govt officials with a small popular following otherwise. *Target audience*: government, general public.	Generally limited to online comments, questions, and email feedback forms. Most national knowledge portals closely tend to their site's knowledge production as an expert-only enterprise.
	Experts (biologists, ecologists), amateur hobbyists. *Target audience*: People interested in ecology, natural history, and biodiversity.	In one exception, non-experts are permitted more rights to add their own content, such as photos. With a brief screening by the platform managers, dedicated non-experts of high-quality information can contribute written content.
	Civil society, students, researchers, media, policymakers, (elite) public. *Target audience*: Policymakers and govt, civil society, researchers and students, activists.	Two portals enable users to change information published on the site (pending the review of a moderator), as in Wikipedia.

One portal has begun hosting annual meetups for audience members. |
| | Unknown. *Target audience*: Students, general public, industry. | Another portal organizes live events, such as festive gatherings as well as media and educational workshops. |

	Civil society professionals and organizations, researchers and students, hobbyists. *Target audience*: General public and civil society.	
	General public, NRIs (non-resident Indians), international civil society organizations, governments. *Target audience*: Public.	
	Students and researchers, development professionals. *Target audience*: Development practitioners of all backgrounds, but especially non-professionals.	
Project Management Software/ Dashboards *(Audiences)*	Development organizations, government, donors. *Target audience*: Same.	Only members (development organizations and donors) can enter and change information on site. Public can view everything except donor information, internal messages between users (often org-donor communication), and project updates.
Mobile Phone Platform (Audiences)	Rural citizens, especially who are illiterate or semi-illiterate. *Target audience*: Same.	Moderators contact users when messages they have recorded do not meet editorial policy. 15-30% of content is paid advertising or promotional whereas the other 70-85% is generated by users.
Resource Mapping *(Audiences)*	Industries, governments, development professionals, citizens. *Target audience*: Industries. Residents of large apartment complexes and several businesses in Eastern Bangalore. *Target audience*: Residents, businesses, and anyone occupying Eastern Bangalore for work,	No content is produced or influenced by users. Users may use the platform to generate reports for their business operations by adding data on water use, treatment, and waste, but the algorithms are internal to the tool. Residents and businesses contribute data to the project, and partner organizations use the data to create visualizations. Some people's personal experiences with water are circulated as educational or inspiring stories to promote the project's messages.

	residence, or pleasure.	
Internet or Software Provisioning *(Audiences)*	Those without Internet access, women, marginalized caste and tribal community groups, people of low socioeconomic status, ICT4D organizations and supporters, NGOs without a digital presence. *Target audience*: Same.	Organization conducts surveys before, during, and after the project during which project beneficiaries can voice preferences, problems, and critiques. For physical centers, people are trained by the organization and then manage centers independently. Portals are populated with content prepared and collected by residents, students, and government officials. Software is used by users to create their own designs for loom work.
Film *(Audiences)*	Rural citizens, specifically women's self-help groups first and then the overall rural community. *Target audience*: Same. People interested in water, students. *Target audience*: General public and civil society professionals.	An extension worker shows the films to audiences, facilitates a discussion about it, and posts notes and questions from the discussion online. Regional NGOs with relevant expertise may contribute to video plan, and a local production team makes the films, including scripts and set design, but may not alter the core messaging. Films can be submitted annually from all over the world.
Education Program *(Audiences)*	Groups of students in primary and secondary school, university, and their school advisors *Target Audience*: Schools and colleges in India.	Award-winning school groups are invited to Bangalore for a weekend of celebration, sustainability education, and sharing. Teachers and schools associated with award-winning projects are mentored over the course of two years in sustainability education.
Community Project/ Organizing *(Audiences)*	Most organizations have the following mixture of people who they reach and interact with (order of priority varies according to the organization): Government (multiple levels), development practitioners,	In educational programs and media campaigns, messaging is tightly controlled by the organization, as it is learned, discussed, and reported. Conferences are events where participating orgs and professionals can produce and share information and thereby shift the

	researchers and students, and project/scheme beneficiaries. *Target Audience*: Same (and often future donors). **Some initiatives engage more specific groups, including engineering students, school children, and media.	larger enterprise of the initiative. (Network-based groups make this form of communication more permanent and ongoing.) Projects vary in amount of community participation and influence. While many communications formats feature people outside of the organization (stakeholder meetings, case studies, documentaries), the dialogue and testimony which occurs can be highly situated and controlled by the organization, but it can also be more autonomous.	
Media *(Audiences)*	Most organizations have the following mixture of people who they reach and interact with (order of priority varies): Government, media, general public, researchers and students *Target Audience*: Same. **Some initiatives have more specific audiences (e.g. concerned citizens in Bangalore).	Several organizations manage their content tightly, publishing only work produced by people within the organization, via a tight editorial process, or perhaps including invited guest contributions. Several others have much more open plans for content, such as one, which publishes pieces from professional journalists, citizen journalists they have trained, and submissions (moderated) from the general public. Another two organizations publish only submissions from the general public, including invited guest pieces, though all content is moderated and, usually, edited. All leave options for audience members to comment on a piece and contact its author.	

Funding & Organization Structure

	Funding Sources	*Annual Budget*	*Staff Size*	*Staff Specializations*
Knowledge Portals *(Funding & Organization)*	All are housed in permanent entities, and 5 are/were funded through them: (trusts, NGOs, govt, educational institute). Others	Min: ₹0 ($0) Max: ₹87.8 crore ($13.5m) for initial startup and an annual budget of ₹ 274 crore ($41.5m)	Min: 1 part-time (PT) person working voluntarily Max: 40 paid full-time (FT)	Technology and portal development, project management and fundraising, editors and writers, specialists in Hindi or Kannada.

	seek grants or operate without funding.	Median*: ₹84 lakh ($142K) *One portal did not specify.	Median: 3 people (1 FT, 1 PT)	
Project Management Software/ Dashboards (Funding & Organization)	Independent partnerships with donor orgs or funded by an NGO.	Min: $50-100K (₹32-65 lakh) Max: $200K (₹1.3 crore), though varies per year	Min: 1 FT Max: 4 FT, 2 PT	Project management, technology, data analysis, community management, design, social media, fundraising.
Mobile Phone Platform *(Funding & Organization)*	Investors, grants, corporate clients (marketing surveys, advertisements.	₹1.2 crore ($184K)	30-35 FT	Project management, content moderation, field coordination.
Resource Mapping *(Funding & Organization)*	Corporate donations (monetary and in-kind services) and sponsorships.	(Both initiatives declined to specify.)	Min: 1 PT (paid), 10-15 PT (volunteer) Max: 7-10 PT	Project management, technology, data and dataset collection, community engagement, mapping.
Internet or Software Provisioning (Funding & Organization)	Grants, CSR, paid memberships (subsidized).	₹16.5 crore ($2.8 million)	70 FT in hq, 140 at regional centers and in field	Project management, technology, field coordination.
Film *(Funding & Organization)*	Grants (often from govts), donations.	Min: ₹3 lakh ($5K) to ($25K) ₹16 lakh Max: ₹70 crore ($10.8 million)	Min: 1 PT, volunteers Max: 150 FT staff	Project management, festival staff, film production, field coordination, survey research.
Education Program (Fund., Org.)	CSR donor.	₹1-1.2 crore ($154K-$184K)	5-7 PT	Project management, education, translation, sustainability.

Community Project/ Organizing *(Funding & Organization)*	Host organization, grants, cost-sharing with communities or partners, donations, consultancies.	Min: ₹9.75-52 lakh ($15K-80K), depending on grant Max:: ₹3-6 crore ($510K-1.2 million) Median*: ₹2.5 crore ($420K) *4 orgs declined to specify.	Min: 2 FT, interns Max: 70 FT Median: 5-7 FT	Project management, research, field coordination, knowledge management, capacity building, topical domains (water, seeds, soil, env. flows, etc.), communication.
Media *(Funding & Organization)*	Host org, fellowships and grants, paid subscriptions, advertisements, CSR, govt funding.	Min: ₹0 ($0) Max: ₹60 lakh ($92K) Median*: ₹25 lakh ($38K) *Two orgs did not specify.	Min: All volunteers Max: 30 FT internally, 180 overall PT/FT Median: 4 FT, volunteers	Project management, editing, writing/ research, media analysis, technology.

Success, Impacts, and Web Analytics (when applicable)

One section of the interview included questions about each initiative's definitions and ideas about success, examples of larger impact for society or their audiences, and any metrics they might use to evaluate themselves or their projects. Because organizations often did not specify their evaluation metrics (they are often determined by project and by funders or a board of directors), I include here only some web analytics, when relevant, which count the number of unique visitors to a digital platform.

There are several unique notes about metrics for several organizations that should be included here: Broadly, interviewees recounted their ideas about success in different ways – some spoke about it retroactively according to awards won or achievements secured while others gauged it by more ideal or eventual goals. Project management platforms are not only interested in measuring their own success according to certain metrics, but they often require their project implementer users to report on one or several metrics throughout the duration of their project. They, in some ways, seek to popularize self-auditing and public-reporting based on metrics throughout the water and development sectors.

Many organizations were striving to discover metrics by which they could accurately gauge their overall performance and success. For some, this means pursuing largely quantifiable measurements, such as calculating the amount spent on each piece of content created and its return on investment. For others, this means also devising qualitative

assessments, such as regularly collecting instances of change/impact from people who use the platform, administering surveys after a media campaign to see if there has been an increase or change in people's awareness because of a particular campaign, or soliciting other forms of qualitative feedback.

	Definition(s) of Success	*Impact Example(s)*	*Web Analytics* (self-reported)
Knowledge Portals *(Success & Impacts)*	To be widely useful in knowledge seeking, at amateur (general inquiry, deepening hobbyism) and professional levels (citations in papers, new discoveries, policy-making). Ultimate goal: To publish 1 page on platform per species and much more use per day.	An observation posted on the portal led to the discovery of a new species for India; 20-30 peer-reviewed academic publications have used the portal for research (and given credit).	17K unique visitors (UV)/month, 35% are returning visitors.
	In beginning: High rankings in search algorithms. Now: to be seen by govt as watchdog.	Govt has included some commentary in their language for programming and policy.	50-60 UV/ day
	Evaluation by govt, generation of new GIS map resources.	(No examples – became non-operational soon after launch.)	n/a
	(Unspecified.)	Some content has won awards or has helped small orgs find funding.	122K UV per month (English and Hindi sites)
	Number of unique users, pageviews (web analytics). Now looking for qualitative metrics. Ultimate goal: to become a "citizen's portal."	Nothing specific, but often will forward concerns posted by audience on blog to host org, which sometimes results in further investigation.	4K UV/day
	Govt created a national water informatics center as a response to portal, govt has started to invest	Spawned a natl water informatics center; helped make portals a dominant/normative format for data dissemination.	6.4K UV/day

	in automation and instrumentation for water management, won a national award, ppl appreciate the portal (evidenced through emails), invitations to speak abroad. Web analytics numbers. Now also looking for qualitative metrics.	(Unspecified.)	250-300K UV/yr
Project Management Software/ Dashboards *(Success & Impacts)*	To normalize an evidence-based approach to water and sanitation; build a more active network of ppl sharing solutions and information in water sector; for platform users to "hang out with your friends, get answers to questions that you have, and *learn* every time you come." Ultimate goal: to solve water access for 200 million ppl.	Supported 2 million ppl in gaining access to potable water; contributed to greater awareness about water challenges (publicly) and about focusing on smaller orgs (among donors); all member orgs now track project metrics.	20K UV per month
	To minimize donor roles to giving money (and not evaluating or designing projects) and give implementers total powers to design-revise-approve projects; to foster implementer – implementer communication.	Creation of community among project implementers; achieved several rounds of project peer-review (thus preventing develop-ment project failures).	Unspecified
Mobile Phone Platform *(Success & Impacts)*	To increase awareness, behavior change, empowerment, grievance redressal within development issues.	When healthcare workers play clips from platform, ppl are more likely to believe health worker information during home visits and trust govt programs more generally; forward complaints to	5 lakh users (by mobile number) since inception (6 yrs)

		govt departments.	
Resource Mapping *(Success & Impacts)*	To be the tool that satisfies basic water resources analysis for industrial sites. Eventually: to be used for reporting sustainability metrics or environmental assessments.	None yet.	8K UV since launch (4.5 months)
	General community awareness of water, its scarcity in area, and conservation. Ultimately: to achieve a net negative balance of water use in the area and to restore water to aquifer.	Many communities have started conserving water and installed water saving technologies, are concerned about GW and want to do something.	n/a
Internet or Software Provisioning *(Success & Impacts)*	Ppl/govt have started to request and demand digital services (Internet, software); to understand "digital India" so to better broker it as a vision and goal to others.	Met with Mark Zuckerberg to discuss possibilities for Internet in India and also helped facilitate Zuckerberg's 2014 visit to India; reached 1 lakh ppl; brought Internet to some areas; established over 100 computing centers across India; built websites for many NGOs, which helps them in fundraising.	n/a
Film *(Success & Impacts)*	Number of people reached and ratio of practice adoptions (adoption rate, avg and per video).	Reached over 500K farmers even without Internet or electricity; changed many practices (agricultural, health, etc.) in India and Africa; spread software improvements to govt agencies.	Avg adoption rate: 54%
	To inculcate a general responsibility toward water; to be an activist space; to tour the film festival internationally.	Reached hundreds of school children in Karnataka and across India as well as festival attendees.	n/a
Education Program	To build frameworks and create capacity for	Too early to assess impacts, but some participants are applying	n/a

(Success & Impacts)	sustainability education in schools across India; to increase reach (geographical, language).	values or skills learned in program: schools have installed RWH systems or are using theater approaches to education; a college participant said he has decided to pursue env issues professionally.	
Community Project/ Organizing *(Success & Impacts)*	Invitations and honoraries from prestigious institutions and entities, to be an org that others see as trustworthy and relevant.	Regularly contributes language and expertise to important national, state, regional policies (and policy processes); liaisons btw orgs to connect them with resources needed; contributes to better rollout of particular policies (e.g. IWRM in Rajasthan) by staging interventions when problems are foreseen; organizes meetings with diverse stakeholders.	n/a
	For projects to improve people's lives across South Asia, even if slightly – this is usually very slow moving, so "success" is about seeing if a project has moved things in the right direction.	Slums and slum dwellers in some areas have learned and started to ask for rights bc of some projects and are now organizing themselves to make community improvements (toilets, building a fence…); created opportunities for dialogue btw community members, govt.	n/a
	When you get the results (river restoration, policies or uptake from govt, media coverage, etc.) you aim for.	Seven rivers "restored," national awareness brought to Ganga rejuvenation issue; 1000s of school children trained; 1000s of RWH installed; has won many prestigious international awards.	n/a
	(Unspecified.)	Developed an alternative reservoir operating model that better shares water among more downstream users and the political leverage to get it implemented; published first comprehensive collection of water conflict case studies in	n/a

		India; diffused political drama surrounding dam conflict btw Maharashtra and AP through writing nationally and in multiple languages.	
	Targets are set annually (number of people reached, papers published, trainings, participation in conferences/ exhibitions); number of invitations to present; positive feedback from ppl trained/ served; trainees building upon and sharing knowledge learned in trainings.	Trained thousands of ppl in decentralized waste treatment systems and installed such systems throughout India and Asia.	700-800 UV per month
	(Unspecified.)	Chaired one section of natl water policy; has proliferated hydrogeology in govt policy and NGO programming across India; trained thousands of ppl in hydrogeology and monitoring groundwater.	n/a
	Achieving targets for goals per thematic node (e.g. specific govt policy achievements, bringing in funding, setting up institutional mechanisms to normalize or better support rainfed agriculture).	Policy suggestions have been included in the 12th Five Year Plan; making progress on a new policy articulation on perennial lakes, a fisheries policy.	n/a
Media *(Success & Impacts)*	To influence particular decisions or policies; to be recognized and consulted by media and govt; was included in a list of the top 50 water blogs in the world.	Govt (at various levels) has included language in policy, commenced investigations, and sometimes personally responds to published pieces; development projects have been denied clearance because of critiques published; an env impact assessment was translated into	Blog: 400 UV per day, Website: 40 UV per day 130-150K UV per month

	Hindi (demanded by the org) for a development project.	
To improve the quantity and quality of WASH coverage in mainstream journalism outlets.	Several journalists write more about water in mainstream media.	n/a
High numbers of users and pageviews and positive audience feedback (emails, comments).	Stories have impacted popular perception of environmental and health issues (e.g. antibiotics in chicken, pesticides in sodas) to the point where, for instance, now schools don't drink or sell sodas. Stories have led to policy changes, such as in the Delhi public transportation system after a campaign about air pollution (vehicles switched to CNG, compressed natural gas) or, for another story, certain pesticides linked with deformities became banned. *This widely known organization seems to most directly impact public perception and policymaking in the sample.*	Unspecified.
To see similar platforms emerge in other cities (i.e. those which develop citizen-journalism, report critically on urban developments, support "vibrant democracy").	Has contributed to more ppl joining particular urban causes (e.g. minimizing, recycling waste), and a few stories have led to formal legal investigations.	130-150K per month
To generate positive impacts through its media reporting, both quantifiable (e.g. funds raised, ppl helped) and qualitative (still figuring out, but doing follow-up interviews to see if ppl or org featured were helped in any way).	Because of particular stories, ppl often give money or resources to the person, org, or issue covered (e.g. someone anonymously installed street lights along a street), and readers report personal benefits (e.g. a blind woman started experimenting with photography). Generated wider interest in positive news.	500K UV per month

	To be a "truly conversational space" where ppl can express critical commentary and reflection free of censorship.	Influenced the drafting of anti-corruption legislation, became a cathartic space for reflection after moments of national crisis, gave some spotlight to student movements in Calcutta.	Twitter followers: 60-70K Blog: 15K UV per month
	Ministry (funder) defines success, which include number of uploads per day, timeliness of newsletter, quality of newsletter.	Unknown.	Unspecified.

APPENDIX B:
Pearl's school project requirements as a series of visual and imaginative tasks

(IRFT) – designates tasks that require an imaginative or cognitive re-framing

(VT) – designates tasks that are distinctly visual (most also include an imaginative
or cognitive re-framing)

Project Requirement	Re/sight or Re/frame
Water Map: Draw the school campus along with its buildings and other features, like a map, indicating: (i) locations of water sources, storage, usage, and disposal; (ii) which staff (cleaning, security, administration) is/are in charge of the water supply, storage, and usage; (iii) the flows of water between source, storage, and uses; and (iv) different types of water use.	1: Seeing one's school institution or campus as a social and ecological totality, including the school's population, which is comprised not only of students and teachers, but also administrative, cleaning, security, other staff, and the biota of the school's campus **(VT)** 2: Identifying the human implements that are used to manage water (i.e. pumps, pipes, cisterns, etc.) within their functional context of directing water towards a human use **(VT)** 3: Visualizing water as a connected and flowing system in between mostly human elements **(VT)** 4: Categorizing the human-water relationship into various uses (or treatments before/after use): storage, filtration, harvesting, pumping, cleaning, flushing, bathing, gardening or growing plants, etc. **(IRFT)** 5: Drawing maps (and featuring the relationships of people and technologies to water in a map form) **(VT)**
Water Budget/Audit: Measure water usage throughout campus and calculate: (i) monthly usage (total, per capita, and by types of use); (ii) water usage as compared to availability and extraction; leakages (in terms of amount and cost of water); (iii) water quality across five points of water usage;	6: Learning to visually estimate amounts of water (in L/min) in knowable terms (mugs, buckets, or the time to fill them) **(VT)** 7: Identifying and witnessing various human labor in the school, especially in terms of their water uses (one directive of the assignment is to follow various staff around for one day to measure their average daily water use) **(VT)** 8: Locating leakages as and reframing them as "lost water" and the consequences of human mistakes **(VT)** 9: Translating the amount of water lost through leakage into the number of potential uses (flushes, buckets, etc.) or cost of water lost **(IRFT)**

(iv) the amount of potential harvestable rainwater on campus (and its savings in amount and cost of water).	10: Water use by the institution per person and on a daily and monthly basis **(IRFT)** 11: Seeing one's use of water in reference to the amount available at the source **(IRFT)** 12: Seeing the school's rooftop surfaces in terms of yield of potential harvestable rainwater **(VT)** 13: Imagining new possibilities for the school's infrastructure **(IRFT)** by designing or redesigning a rainwater harvesting system for the school and then extending that same process to the whole neighborhood surrounding the school **(VT)** 14: Accounting for water usage in a ledger/balance sheet **(VT)**
Water Quality Testing: Assess the potability of the school's water Analyze how the water quality may have impacted friends at school	15: Visibilizing the numerous substances, some more harmful than others, contained in water and which impact its quality through careful looking or chemical testing **(VT)** 16: Reflecting on how the health and wellbeing of people is impacted by certain kinds of substances, as well as what kinds of uses water can be reserved for **(IRFT)**
Reflection Essay: Write an essay to synthesize the knowledge gained from these exercises, responding questions, such as: (i) How are water's sources, uses, and quality linked to each other? (ii) Is the water management system at the school sustainable? (iii) What are the factors that impact rainfall globally and in your region? (iv) What are the impacts of sewage water as it flows out from your school?	17: Understanding rainfall to be impacted by various factors, locally and globally, and that it can fluctuate seasonally **(IRFT)** 18: Expanding the geographical frame of a water system from one's school campus to the world with water ultimately shared among/across all **(IRFT)** 19: That water management/delivery often requires energy expenditure; how much energy is required of school's water system **(IRFT)** 20: Imagining and locating the water released downstream after using it – its quality, that it goes somewhere after students use it, where it goes **(VT)** 21: Imagining and locating the people who receive water downstream and how that water impacts those people, especially in terms of amount and quality. **(VT)** 22: Expanding the view of water use and waste to animals, insects, plants, and ecological cycles (though keeping the

(v) What are the different plants, insects, and animals on the campus and how do they get water? Do they produce waste water?	frame of use) **(IRFT)** 23: Placing human water use in terms of its impact on ecological systems **(IRFT)**
Analytical Essay: Write an analytical essay on the many areas of life water impacts and how. Identify a theme or multiple topics which interest you and begin research using data collected during part A of the project, references to books or interviews, other data, insights from conversations.	24: Expanding awareness of water across all aspects of (human) life, to non-human entities, and of social differences or stratification in water access **(IRFT)**
Elective Components (2 are required, students' choice)	**Re/sight or Re/frame**
Rainwater Harvesting Design: Design a rainwater harvesting structure for your campus	(see 13 – reimagining school, home, and neighborhood infrastructure) **(VT)** (see 9, except assessing *potential* water, rather than lost water, according to its amount in everyday uses (e.g. flushes) and Rupees) **(VT)**
Measuring Rainfall Patterns: Understand the rainwater endowment of your area and how it varies day to day (using a modified plastic bottle as a daily rain gauge)	25: Repurposing everyday throwaway items into functional objects **(VT)** 26: Visibilizing daily rainfall and other forms of precipitation in the region, recognizing that it accumulates over time and by how much **(VT)** 27: Recognizing the situatedness or in/correctness of measurement by comparing home measurements of rainfall to official records **(VT)** (see 16) 28: Imagining or looking for how changes in rainfall can impact one's friends, neighbors, and school **(IRFT)**
Comparative Water Audits: Assess the reasons for differences between per-capita water consumption between your school and	29: Seeing institutions (and perhaps their virtuousness) in terms of their water use **(IRFT)** 30: Seeing new institutional possibilities but through discovering already-existing scenarios **(IRFT)**

another school of your choice	31: Qualifying water use (amount) by its impacts on people (health, cost, waste, cleanliness, etc.) **(IRFT)**
Water Filtration: Understand and make a simple affordable water filtration system from used plastic bottles	(see 23) 32: Seeing everyday objects as technologies for disease and diarrhea prevention **(VT)** 33: Seeing oneself as able to disinfect water and prevent water-borne illnesses in the home **(IRFT)**

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