UC Irvine
UC Irvine Electronic Theses and Dissertations

Title
Accelerating Innovation in Global Contexts

Permalink
https://escholarship.org/uc/item/3sv830h5

Author
Haines, Julia Katherine

Publication Date
2015

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA,
IRVINE

Accelerating Innovation in Global Contexts

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Information and Computer Sciences

by

Julia Katherine Haines

Dissertation Committee:
Bren Professor of Information and Computer Sciences Judith S. Olson, Chair
Bren Professor of Information and Computer Sciences Gary M. Olson
Professor Bonnie Nardi
Assistant Professor Melissa Mazmanian

2015

DEDICATION

To

all the founders I have met in this journey

in admiration of their dedication and perseverance

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

CURRICULUM VITAE

Julia Katherine Haines

2015   PhD in Information and Computer Sciences, University of California, Irvine

2010   MS in Human-Computer Interaction, DePaul University

2005   MA in Social Sciences, University of Chicago

2003   BA in Anthropology
       BA in Journalism and Mass Communication (Visual Communication),
       University of North Carolina at Chapel Hill

FIELD OF STUDY

Informatics

PUBLICATIONS

Peer-Reviewed Conference Publications
Haines, J.K. (2015). Collective Innovation: The Role of the Pitch in Startup Ecosystems. Collective Intelligence 2015.

Haines, J. K. (2014). Iterating an Innovation Model: Challenges and Opportunities in Adapting Accelerator Practices in Evolving Ecosystems. Ethnographic Praxis in Industry Conference Proceedings (EPIC 2014), 276-288.

Haines, J. K. (2014). Accelerating Cultural Capital: Reproducing Silicon Valley Culture in Global Ecosystems. Proceedings of the ACM International Conference on Collaboration Across Boundaries (CABS 2014).

Haines, J. K. (2014). Leveraging Diversity in Intercultural Creative Teams. Collective Intelligence 2014, MIT.

Haines, J. K., Olson, J. S., and Olson, G.M. (2013). Here or There?: How Configuration of Transnational Teams Impacts Social Capital. Human-Computer Interaction - INTERACT 2013, Part II. LNCS, vol. 8118, Springer, 479-496.

Haines, J. K. (2013). Cultivating Creativity in Diverse Teams. Proceedings of the ACM Conference on Creativity & Cognition (C&C 2013), 32-41.

Short Papers, Posters, and Demonstrations
Haines, J.K. (2015). CSCW Principles for Citizen Science. Collaborative Innovation Networks Conference (COINs 2015), Tokyo, Japan.

Haines, J.K. (2014). Accelerating Innovation: A Global Model in Local Contexts. Ethnographic Praxis in Industry Conference (EPIC 2014), New York, NY.

Haines, J.K. (2014). Cultures of Innovation: The Accelerator Model in Local Contexts. The ACM International Conference on Collaboration Across Boundaries (CABS 2014), Kyoto, Japan.

Haines, J. K. (2014). Emerging Innovation: The Global Expansion of Seed Accelerators. The ACM Conference on Computer Supported Collaborative Work (CSCW 2014 Extended Abstracts), Baltimore, MD.

Haines, J.K. (2013). Cultivating Creativity in Diverse Teams. HCIC 2013 Boaster, Asilomar, CA.

Haines, J.K. (2013). Innovation Flows in the Pacific Rim. 2013 Workshop on Uniting the Californias. Irvine, CA.

Olson, J.S., Olson, G.M., Abrams, S., Bietz, M., and Haines, J.K. (2011) Collaboration Success Wizard: An Online Assessment Tool for Distributed Work. International Science of Team Science Conference (SciTS 2011), Chicago, IL.

Haines, J.K. (2011). Creativity and Culture: A Proposed Study of Innovation in Intercultural Collaboration. Center for Research on IT & Organizations (CRITO) IS/Informatics Workshop, University of California, Irvine, CA.

Theses
Haines, J.K. (2006). The Implications of Digital Technology on the Fourth Estate: The Power of Non-Journalistic Media in the Iraq War. Master's Thesis, Social Sciences Division, University of Chicago, Chicago, IL.

Haines, J.K. (2003). Photographic Representations of Aborigines in Mainstream Australian Media. Honors Thesis, Dept. of Anthropology, University of North Carolina at Chapel Hill, Chapel Hill, NC. (OCLC 54396994)

ABSTRACT OF THE DISSERTATION

Accelerating Innovation in Global Contexts

By

Julia Katherine Haines

Doctor of Philosophy in Information and Computer Science

University of California, Irvine, 2015

Professor Judith S. Olson, Chair

Silicon Valley is known the world over as an epicenter of technology innovation. As such it is frequently analyzed, compared, and imitated. Accelerators, short-term incubators that foster technology startups, attempt to appropriate many elements of Silicon Valley and apply them in different global contexts. They bring together cohorts of technology startups in various global locations to help them develop their teams and products and learn from and connect with others in the ecosystem in a limited-duration "bootcamp." Since the initial one was created in 2005, accelerators have expanded rapidly into all corners of the globe with the promise of providing the necessary soft infrastructure for creating technology startups and fostering an ecosystem. But can this ideal type of Silicon Valley be appropriated through emulating its environments, culture, and practices?

To explore this, I conducted an in-depth qualitative study of startup accelerators situated in different locations globally. Much of this research was conducted *in situ* through ethnographic fieldwork over the several-month courses of accelerator programs in Singapore and Buenos Aires, providing a rich view into the day-to-day workings of these

accelerators. This was complemented by foundational research through interviews in Silicon Valley and abroad with a variety of accelerator participants and personnel globally.

This research presents a framework of Silicon Valley as a model ecosystem, consisting of nine major components. It demonstrates the ways in which accelerators attempt to appropriate this model and the isomorphic mechanisms that play a role in this. At the team level, it investigates issues that arise for founders participating in the startup culture of accelerators in different global contexts. And at the practice level, it examines the surprising roles of *Lean Startup methods* and of *pitching* in both innovation and social transformation.

This work highlights the interplay of innovation and legitimacy for these accelerators and startups and shows how accelerators are shaping the flow of innovation globally by spreading a model that prioritizes diffusion of innovation at the front end of the process. This has implications for the development of accelerators and innovation ecosystems at the global and local levels.

CHAPTER 1. INTRODUCTION

"But how do we replicate Silicon Valley?" That was the question that pervaded the air in an auditorium packed with techies, entrepreneurs, investors, and government officials. The suggestions varied from increasing the flow of capital to promoting diversity to having more cafes. The event was called *Big Tent Singapore: Enabling a Culture of Innovation,* and the panel was entitled "Where is the hub of Asian Innovation." But the conversation was laser-focused on discussing how to make Singapore more like Silicon Valley. It became clear that in the startup world globally, innovation = Silicon Valley. But innovation ecosystems are complex systems that combine a large number of interacting elements that create a whole greater than the sum of its parts. Can emulating the environments and practices of Silicon Valley produce similar results?

In recent years, the number of technology startups has exploded worldwide. A combination of cloud computing platforms, programming frameworks, code sharing, marketing platforms, distribution channels, etcetera have lowered barriers to creating technology startups. Alongside this, other structures have spread the necessary soft infrastructure —the "know-how" of doing a startup business, the connections, and the culture. *Accelerators*, incubators that foster high-tech startups, provide such soft infrastructure. They bring together cohorts of international startups to develop their teams and products and learn from and connect with others in the ecosystem in a limited-duration "bootcamp," based on emulating components of Silicon Valley's ecosystem. The initial accelerator, Y Combinator, started in 2005 and has spawned innovative companies like DropBox, Airbnb, Reddit, Heroku, and Code Academy. Since then, accelerators have been expanding globally, with an estimated 230+ in 33+ countries as of early 2015

(Christiansen 2015). At the same time as accelerators and the startups they foster seem to be exploding globally, discourse around digital innovation seems firmly centered around Silicon Valley's innovation ecosystem and doubts as to whether it in fact can be appropriated.

The accelerator model has been successful in fostering some innovative startups. A better understanding of the environments, structures, and networks as well as the culture, people, and practices, would aid in illuminating what plays a role in innovation. At the micro level, this research is focused on the elements of Silicon Valley that accelerators try to replicate in various contexts, and how those elements are implemented, complicated, adapted, and transformed in practice.

At a larger level, this research investigates this pattern of innovation and the creation of innovation ecosystems more broadly. Innovation or entrepreneurial ecosystems are complex systems with a variety of interacting elements. And, importantly, these sorts of startup innovation ecosystems aim to create a very specific kind of culture. As microcosms of such ecosystems, accelerators have much to show us about these cultural aspects of innovation. By then looking at this model in other global locations, we can investigate how this Silicon Valley innovation model works on a larger scale.

I explored these topics in situ through ethnography at two different international field sites — an accelerator in Singapore and another in Buenos Aires— complemented by interviews with other accelerator startups and associated personnel in Silicon Valley and globally. This dissertation presents a variety of different levels of analysis and theoretical approaches to understanding the spread and impact of startups accelerators globally. In Chapter 2, I first provide some broad background on theories of innovation and innovation

ecosystems and then highlight Silicon Valley as an ideal type of innovation ecosystem that is often emulated. I then introduce accelerators as an emerging form that focuses on fostering innovation in different contexts globally. And in Chapter 3, I explain my ethnographic approach to this research and provide some background on my field sites. Then, in Chapters 4-7, I look at the phenomena at different levels— first, at the accelerator level, then the team level, and finally, the practice level.

Chapter 4 presents a framework of Silicon Valley as a model ecosystem, consisting of nine major components, and demonstrates the ways in which accelerators attempt to appropriate this model and the mechanisms that underlie that. Chapter 5 shifts from a focus on the ecosystem-accelerator level to the accelerator-team level, looking at some of the issues that arise for teams participating in the startup culture of accelerators, but also some of the benefits. And Chapters 6 and 7 focus on the particular practices of *Lean* and *pitching* and examines their surprising roles in both social transformation and innovation. In conclusion, I show how accelerators are shaping the flow of innovation globally by spreading a model that prioritizes diffusion *a priori.* I highlight the interplay of innovation and legitimacy for startups and its implications for the development of accelerators and innovation ecosystems at the global and local levels.

CHAPTER 2. BACKGROUND & RELATED WORK

In recent years, the attention to innovation in the technology sphere has increased exponentially with new developments in information and communication technologies (ICTs) becoming almost synonymous with the term. Globally, there is broad interest in understanding how to support such developments and create innovation ecosystems, particularly in ways that mimic the success of Silicon Valley. In this chapter, I provide a broad overview of this focus on innovation and developing innovation ecosystems. I then highlight some general background on Silicon Valley's development as a technology center and how recent advancements and changing dynamics have spawned some new attempts to emulate Silicon Valley. I then delve into the emergence and expansion of one of these models: the accelerator.

2.1 Innovation and Innovation Ecosystems

2.1.1 Innovative Products and Innovation Processes

Innovation is defined in countless ways depending on the context and the author. At its most basic level, innovation refers to newness in form or approach (Van de Ven 1986). There have been numerous studies of innovation both from a product and process perspective (Bundy 2002). King et al. (1994) and others characterize innovation in information technology as consisting of three overlapping stages: invention, innovation, and diffusion. Invention is the idea or product, which does not necessarily have economic value. Innovation is the stage focused on transforming this into usable form as a product, technique or process. And diffusion is spreading the use of the innovation, or the capacity

to produce it. Rogers (2003) described the generation of innovations as a complex, multi-phase development process, consisting of the following:

1) Recognizing a problem or need

2) Basic and applied research

3) Development

4) Commercialization

5) Diffusion and adoption

6) Consequences

Thus, the term innovation encompasses both the process and the product simultaneously.

From a product, or result, perspective, there are many types of innovation discussed along a variety of spectra. One subset focuses on generation versus adoption or diffusion. Another focuses on product versus process innovation (Damanpour & Gopalakrishnan 2001). Yet another focuses on incremental versus radical innovations (Koberg, Detienne, & Heppard 2003), and some on how innovation is cumulative (Murray & O'Mahony 2007). But the most discussed and frequently debated innovations in the current technology sphere are what are called *disruptive innovations* — those that disrupt an existing market or displace an earlier technology.

Though disruptive innovation was coined by Clayton Christensen in the mid-1990's (Christensen 2013), the concept of innovation through creative destruction was first popularized through economist Joseph Schumpeter's theories from the 1940s (Schumpeter 2013). Schumpeter described this 'revolution from within' as an inherent part of innovation. What followed was continual discussion as to the nature of innovation and what Rogers calls a "pro-innovation bias" (1976). Innovation is an important driver of the

economy, but much research has noted that this does not mean it is necessary or positive (Abrahamson 1991). The argument about whether innovation is a destructive force continues to be a topic of interest today. In a recent article, Vint Cerf answered the question: "Does innovation create or destroy jobs?" by saying both yes and no, and emphasizing that what it really means is that, in order to succeed, we have to continuously learn (2014).

But while the products of innovation are noted for their revolutionary impact in hindsight, the processes related to being innovative are often spoken of in very different terms. A main challenge for organizations in the innovation business is that they have a tendency to focus on creating innovations that provide revolutionary impact to the market — *disruptive innovation* — but at the same time, many of the innovation processes emphasize iterative, small feedback loops to refine ideas and their products, based on feedback from those who would use the product. The key point here is that disruption takes time. This creates a sort of dichotomy of focus on revolution and evolution from the outset. We can think about this dichotomy in terms of Norman and Verganti's (2012) discussion of radical versus incremental innovation. By their definition, radical innovation is "a change of frame ('doing what we did not do before')," while incremental innovation is "improvements within a given frame of solutions ('doing better what we already do')." Norman and Verganti argue that "radical innovation is surprisingly rare" and requires agents of "meaning or technology change" (2012, p. 6). In their point of view, most innovation is incremental. For instance, something like Netflix might have risen to be disruptive, but it got there slowly, building upon advances in streaming and compression on the technology side, and changes in meaning around how we consume video content and what a TV show even is.

Other work has focused on innovation from this incremental approach— as more of a routine, mundane process. Giddens (1984) considered innovation a multidimensional phenomenon that occurs in daily routines of practice. Although, sometimes these small-scale phenomena make an impact in large-scale societal change over time (Wenger 1999). John Seely Brown (1991) described innovation as generated in communities-of-practice, claiming that learning is a key element in innovating and that actual communities and actual practices are directly connected to it. He also described innovation as lying at the interface between an organization and its environment, that the "process of innovating involves actively constructing a conceptual framework, imposing it on the environment, and reflecting on their interaction" (1991, p. 52). However, in thinking about how all of this is manifest in products of innovation, Rogers (1983) has argued that although new ideas are the core of innovation, and that the "newness" of the idea is defined of the perspective of the adopter. In other words, innovation is about the person adopting and using the innovation— not the innovator. Innovation can be disruptive and can arise in a number of ways over time, but in the end, whether something is in fact innovative is in the eye of the beholder.

2.1.2 Innovation Ecosystems

Whether considered mundane or dramatic, many have attempted to determine how to replicate innovation, or environments to encourage innovation at least. A recent report on the Global Innovation Index highlights the collaborative flow of ideas between innovation actors in so-called innovation ecosystems as crucial to our understanding of how to support innovation (INSEAD & WIPO 2012). It is frequently noted that scalable startups, particularly those in the ICT industry, such as Google, Skype, or Twitter, often

sprout in general proximity to one another in these sorts of startup ecosystems, most

notably in places like Silicon Valley, Tel Aviv, Los Angeles, Seattle, and New York-the top five

in a list put out by the Startup Genome Project (2012). Key factors often mentioned in these

areas include talent, density, culture, capital, regulatory environment, infrastructure,

institutions, etcetera, and frequently, researchers focus on specific parties involved. Many

have noted the "triple helix" system of university-industry-government interactions as an

"innovation system" (Ranga & Etzkowitz 2013). Others have expanded beyond this core

group, suggesting a "quadruple helix" that includes the media-based and culture-based

public as part of "an emerging fractal knowledge" and innovation ecosystem (Carayannis &

Campbell 2009). These sorts of geographic innovation areas have often been called

"clusters" (Porter 1998) and benefit from what are called cluster effects (De Fontenay &

Carmel 2001). This research suggests the comparative advantages of being in innovation

hub areas include abundant human capital, culture of work, tacit knowledge, the close

proximity of a workforce, and government support.

The benefits of clusters are discussed in many industries. But for entrepreneurs and

startups, there are yet more benefits by being located in a shared geographic area.

Researchers have noted that the success of innovating firms is highly dependent on others

within the same geographic area (Adner & Kapoor 2010). Fal (2013) breaks these benefits

down into four major areas. First there are entrepreneurship assets: financing, skills and

talent, and infrastructure. There is business support: government programs and incubators.

There are policies and legislation to help with administrative burdens. And there are

motivation and mindset: legitimacy, attitudes, and culture (2013, p. 149). There are also

benefits to be had by working in more narrowly defined research centers that are even

more condensed geographically. Some of the advantages of such centers include: pooling resources, sharing resources, consulting services, positive effect from higher public image, networking advantages, clustering effect, geographic proximity, cost subsidies and funding support (Chan & Lau 2005).

Recent years have a dramatic focus on helping foster innovation ecosystems to reap all of these benefits. Brown says: "Knowledge is fundamentally changing from being contained within a corporation to being contained within ecosystems of partners," (2012, p. 20). Others have noted that entrepreneurship is as much about the community and its transformation as it is about individual entrepreneurs (Walshok 2013). And nowhere has this idea of innovation ecosystems been more studied than Silicon Valley.

2.2 Silicon Valley as an Ideal Type

2.2.1 Silicon Valley History and Culture

Much has been written about Silicon Valley, its origins (Lécuyer 2006), emergence and coincidence with countercultural movements (Wadhwa, Saxenian, & Siciliano 2012), and development of a distinctive culture over the years (Kenney 2000; Saxenian 1994) . Following World War II, the Department of Defense granted large funds to universities like Stanford to focus on developing technologies to be used in the Cold War. At Stanford, Fred Terman was busy creating Stanford Research Park as a way to promote idea exchange between industry and university programs (Engel & Forster 2014). Thus, the original university-industry-government triple-helix system was organically taking shape.

Meanwhile discussion of the origins of Silicon Valley's culture begins with the "traitorous eight," a group, including Gordon Moore and Robert Noyce, who left Shockley

Semiconductor in the late 1950s and formed Fairchild Semiconductor. Fairchild's culture encouraged openness and egalitarianism, and consisted of a flat hierarchy. Around the same time, the venture capital community was just beginning to form. An informal network of young individuals began to pool investments in technology-focused early stage businesses in the Palo Alto area (Kenney 2000). Successful ventures led to wealthy entrepreneurs, who then became investors themselves, creating a "virtuous circle" of investing in the startup community. Fairchild alumni went on to create other businesses, like AMD and Intel (Lojek 2007).

The tech industry continued to grow and expand at a time when the collaborative and communal ideals of the 1960s were taking root (Turner 2008). This led to ideas like the Homebrew Computer Club in 1975, whose goal was to help others. Hacker ethics guided things ranging from Space Invader and hacking telephone networks, to Xerox PARC, the advent of personal computers, and games and software development. The hacker ethos guided the way knowledge and ideas were shared and collaborations formed, which were later on commercialized by certain individuals (Levy 2001). In the 1970s, the influence of Sand Hill Road in Menlo Park, the area most venture capital firms (VCs) came to be located, was also beginning to take shape. Both Kleiner, Perkins, Caufield & Byers and Sequoia Capital established themselves there. These firms went on to play instrumental roles in technology companies throughout the 1970s and 1980s, helping companies like Apple and Cisco grow.

By the 1980s, a culture of information sharing, collaboration, and mobility allowed companies like Sun Microsystems and Hewlett Packard to thrive, contrasting sharply with other ecosystems, like Boston (Kenney & Von Burg 1999; Saxenian 2008). Large companies

10

like Apple, Microsoft, Sun Microsystems, Intel were all once small. The actors within the

industry both competed and collaborated with each other (Isaacson 2011). More recently

the PayPal Mafia, a group of former PayPal employees, went on to found many other

successful startups (Lacy 2008). They and others surviving the first dot-com boom have

been partially credited with heightening a culture of risk-taking and accepting failure. But

mobility and the diverse backgrounds that comprise the Valley generate key cultural

qualities as well. A nation of immigrants is a nation of entrepreneurs (Senor & Singer

2011). Paul Kedrosky of the Kauffman Foundation notes that immigrants, who are far from

family and friends and thus certain social expectations, feel freer to try things than they

would at home (Feld 2012).

These attributes combine to form a unique collegial culture, what could be

considered "the lube or gears of Silicon Valley," one markedly different from other places,

"an aberration" (Rannala 2014). But that hasn't stopped others from attempting to replicate

Silicon Valley. In fact, it has become the global archetype of an innovation ecosystem (Engel

& del Palacio 2009).

2.2.2 Changing Dynamics

> "For many in the IT industry, the dream is to set up a tech start-up and grow
>
> it into the next Google or Apple…. But which country is right for your
>
> fledgling tech company?" (Shamah 2012)

For many years Silicon Valley in particular has been the capital of the technology

industry, drawing entrepreneurial immigrants from all over. But the global scope and scale

of other ecosystems has been changing. Historically, the US has been the destination of the

world's high-tech emigrants. The number of immigrant entrepreneurs in the technology sector were quite high from the 90's to mid-2000's, but are now beginning to decline. A recent study shows that 43.9% of Silicon Valley startups in the last 7 years had at least one immigrant founder, down from 52.4% in 1995-2005. This study claims that proportion of immigrant-founded companies nationwide has stagnated at 24.3% (Wadhwa et al. 2012) These numbers have been dropping due to both policies making it harder to enter the U.S. and "brain circulation," the phenomena in which high-tech workers find success and then return home to start companies. This has been particularly notable in Indian and Chinese immigrant populations, whose affiliations with the international technical community impact their local communities upon return (Portes, Guarnizo, & Haller 2002), creating emerging hybrid regions that combine aspects of Silicon Valley with the structures and resources available locally (Saxenian 2008).

But now the flow of innovation is no longer just a one-way inbound or round-trip ticket, bringing Silicon Valley ideas back to one's country of origin. Silicon Valley models of innovation, high-tech migration, and distributed collaboration are being exported, creating a criss-crossing patchwork of different origins and destinations, influences, and impacts in the global startup scene. The rise of modular software and the emergence of inexpensive cloud computing has set up the next generation of computing, and this is also the cornerstone for today's emergence of startup scenes globally (Levy 2011). Not only are startup innovation hubs cropping up all over the world, but many of these are attracting global talent from places far and wide, and fundamentally changing the global flow of ideas between innovation actors.

Asia has been and will continue to be a prime focus for entrepreneurial growth, while the Latin American presence in Silicon Valley and the Silicon Valley presence in Latin America have been on the rise. Understanding these flows is important. As suggested by the quote at the start of this section ("Which country is right?"), immigration patterns are no longer simple "brain circulation," but are rather based on what entrepreneurs consider the place with the best opportunity for their startup. Would-be entrepreneurs often consider things like market potential and strategy, government support, infrastructure, talent acquisition, etcetera. Finding the right opportunity and investors and developing the capability to launch and grow is key, and increasingly, they are heading to ecosystems outside of the US.

2.2.3 Emulating Silicon Valley

The sheer number of places attempting to reappropriate the Silicon Valley name for their own ecosystem highlights this desire to replicate the success of the area (see Table 2.1). People view the essence of

Table 2.1: "Silicon" Ecosystems

Ecosystem Name	Location
Chilecon Valley	Santiago, Chile
Dubai Silicon Oasis	Dubai, United Arab Emirates
Silicon Allee	Berlin, Germany
Silicon Alley	New York City, USA
Silicon Beach	Los Angeles, USA
Silicon Beach	Sydney, Australia
Silicon Cape	Cape Town, South Africa
Silicon Coast	Orange County, California, USA
Silicon Roundabout	London, United Kingdom
Silicon Savannah	Nairobi, Kenya
Silicon Straits	Singapore
Silicon Wadi	Amman, Jordan
Silicon Wadi	Tel Aviv, Israel

innovation ecosystems differently, but all as suited to promote innovation — through physical proximity, social connections, and mechanisms that enable cross-pollination of ideas, serendipity, sharing of expertise and experience (Feld 2012). Many authors have taken the ecology or ecosystem metaphor to argue that you can recreate similar environments. Hwang's book *The Rainforest: The Secret to Building the Next Silicon Valley*, explains how to build and measure a similar environment through rules and the right ingredients. He suggests that much like a biological system, Silicon Valley provides the natural setting where innovators 'tinker' together. There is no end to the number of permutations or combinations of ideas, talent, and capital (Hwang & Horowitt 2012). However, others argue that this is an overly-simplistic view of ecosystems. Any model that maintains that a collection of institutions can be mechanically assembled and out will pop a Silicon Valley is flawed (Senor & Singer 2011).

But in the current startup surge, there are a variety of environments and programs that try to emulate aspects of Silicon Valley, regardless. Silicon Valley practices and environments have been (or attempted to be) replicated and spread through various event-based programs like Startup Weekend and Lean Startup Machine and curriculum-based programs like General Assembly as well as through other physical spaces like Hackerspaces and co-working facilities for startups. Startup Weekend, for example, is a program where startup teams are formed and prototypes for software products are built within days. The lower barrier to entry in creating products is one of the major factors why specific Silicon Valley practices can now be replicated across the globe (Nager, Nelsen, & Nouyrigat 2011). Other recent work (Cervantes 2013; Takhteyev 2012) has illustrated how technologies such as social networks have allowed entrepreneurs in other areas around the world to

learn from one another remotely, gaining skills, mentoring, and connections. But in creating such communities and relationships, distance still matters in a number of ways (Olson & Olson 2000). The local presence of key elements is important.

Eric Rannala of Mucker Labs, an LA-based accelerator, says that no place is going to be like Silicon Valley, but that is where startup accelerators come in. He suggests Silicon Valley is like one large accelerator, where it's easy to find peers, mentors, advice (Rannala 2014). Accelerators try to create such a community locally, compensate for missing factors in an ecosystem, and try to institute much of the ethos of Silicon Valley in their processes and structures.

2.3 Accelerators as New Phenomena

"Most big cities, from Berlin and London to Singapore and Amman, now have a sizable startup colony (ecosystem). Between them they are home to hundreds of startup schools (accelerators) and thousands of co-working spaces where caffeinated folk in their 20s and 30s toil hunched over their laptops. " (The Economist 2014)

2.3.1 The Emergence of Accelerators

The initial startup accelerator program, Y Combinator, was founded in 2005. Y Combinator started in Cambridge, Massachusetts, but after the first batch, it moved to Mountain View permanently, where it became part of Silicon Valley's ecosystem. As many note, "The actual form of Y Combinator is deeply rooted in the resources and constraints of the Silicon Valley" (Mauro 2013). The accelerator format provides the soft infrastructure, the "know how" of doing a startup, that emerges from Silicon Valley. Accelerators have been

described many ways, such as factories, schools, or guilds (Miller & Bound 2011), and are often referred to as incubators by outsiders. They are similar in some ways, but they are a very particular model of incubation.

Business incubators in general are not a new concept; programs to foster the development and growth of entrepreneurial ventures have grown over the last few decades from only 12 programs in North America in 1980, to almost 900 by 2001 (Sawhney, Gulati, & Paoni 2002). But accelerators are different from the typical incubator in many ways. Some of the key differentiators between incubators and accelerators include differences in duration, cohort, competitiveness, business stage, education-orientation, and mentorship focus (Cohen 2013). Business incubators typically have indefinite durations of incubation. The businesses they foster start and leave at different times, so there is no sense of cohort or competition. And they tend to foster businesses that are not in the earliest stages, so the focus is more on building networks than education.

By contrast, accelerators function more like short-term competitive bootcamps for small teams. The application process is typically highly competitive. Those that land the coveted spots join a cohort of a few other small teams for around three to six months to develop their product, skills, and strategies, culminating in a "Demo Day" where they present to investors. In return for seed investment, workspace, networks, coaching, and more, the accelerator gets equity in the startup (Miller & Bound 2011). They are typically structured with cohorts working together in co-working spaces. While Y Combinator does not have such a space, another early accelerator, TechStars, established this as a model that many follow. Such spaces have been known to help create communities that promote innovation (Surman 2013). On one hand, the temporal pressure of the limited duration

promotes competition between the teams. But it also promotes collaboration. For example, these spaces have a variety of networking events to promote "serendipitous" interaction and cross-pollination of ideas. Often, the spaces are created in such a way as to emulate the open-space, playful environments that Silicon Valley tech companies are known for.

2.3.2 The Functions of Accelerators

Hugh Mason (2014) co-founder of the JFDI.Asia accelerator based in Singapore, describes the various roles accelerators play for startups. An accelerator:

- fosters and selects startups in a competitive process;

- stages a limited duration program, a "boot camp" for startups, typically 3 to 6 months;

- brings together cohorts of startups to develop teams and products;

- coaches, trains, and supports these teams;

- supplies access to needed resources and initial seed funding;

- provides guidance, metrics, and milestones based on Lean models of innovation;

- connect networks of mentors and investors with founders; and

- culminates with a "Demo Day" to present startups to investors.

Definitions vary on some elements, with the main divides being in the following areas: complete collocation versus partially remote cohort; idea-based versus team-based selection; local versus global product-market perspective; external mentoring versus in-house partners; and private versus public versus mixed funding.

In terms of areas of support, other researchers have broken the categories of support into the following:

(a) "business development support (e.g., consulting, technology assistance);

(b) infrastructure support (e.g., access to office space, shared back-office services);

(c) network support (e.g., access to potential customers, investors, mentors); and

(d) financial support (in the form of grants/investments)" (Lall, Bowles, & Baird 2013, p. 106)[1].

Accelerators' provide value to teams in a number of ways. The economic capital they provide lengthens the time the team has available to focus on their products, known as "runway" within startups. In 2013, accelerators on average provided $20,000-22,000 pre-seed funding, which is used primarily to fund living expenses for founders and other teammates, who often have no other form of income. This allows the team to focus on building the product without worrying about their immediate financial well-being. In terms of social capital, the network that the accelerator creates provides the teams with access to key decision makers, partners, and investors. The mentor and investor network is the core of the accelerator program itself, as it connects each team with a larger community of practice, where they learn new skills and garner advice on directions to take moving forward.

Accelerators also play a direct role in creating value for the product itself. Through the economic capital they provide, they reduce many financial concerns for the initial product development. Teams can therefore afford to create a product that is free or is not immediately sustainable. This freedom allows room for experimentation, for the idea to evolve and further solidify over the course of the accelerator program. Through mentors' extended networks, teams can gain access to otherwise hard-to-reach decision makers and build a relationship. Some of these relationships are lifelines to the products as the teams

---

[1] The original quote has been reformatted into bullet points here.

try to convince themselves and investors of the potential use of the product. And they also create value in product direction through embedded practices like Lean, Customer Development, and pitching, which I will describe later.

Notably, these are the roles that accelerators play for startups. They also play a huge role for investor communities and other parts of the ecosystems in which they are located. There is a growing interest in accelerators' roles in fostering innovation and economic growth in various regions (Mauro 2013). They help support a larger ecosystem, enabling connection and cross fertilization between entrepreneurs and mentors, angel investors and venture capital partners, universities, service providers, government, and other parties. The economic impact on the ecosystem can be seen in the venture capital cycle, where investors have pressure to deploy and can rely on a steady and predictable number of companies in the pipeline. And socially, they bring the ecosystem together in a more solidified way by combing and connecting different networks and providing activities and events through which both bridging (loose connections) and bonding (tight connections) capital are formed. At the larger level, this helps build and strengthen the ecosystem.

2.3.3 Rapid Expansion Globally

Since 2005, accelerators have exploded onto the global technology scene, playing a vital role in shifting flows of migration, influence, and ideas globally. As of early 2015, there are an estimated 230+ in 33+ countries now (Christiansen 2015). A 2013 survey of accelerators found that 73 percent were fewer than five years old (Lall et al. 2013, p. 106). And while the majority of research is largely limited to accelerators in North America and Europe, in the developing world, the annual growth rate of incubators and accelerators is

20% (Kempner 2013). These accelerators draw on worldwide talent, and many focus on garnering a highly-international cohort in pursuit of finding the best talent and ideas.

The type of accelerators I studied are defined here, however, it is also important to note that there are other types of accelerators that have emerged and evolved over the past decade as well. Some notable examples are non-profit accelerators, such as StartX at Stanford, which invests in and guides both socially- and commercially-focused products, but does not take an equity stake. There are also social innovation accelerators like StartupNectar, which focus on developing products for social good. And there are corporate accelerators like Intel's or Coca Cola's which focus on products and services that integrate with the brand, its products, or its data.

Since accelerators are a new phenomenon, little research has been done to understand this growth and the impact they have had in various regions globally. My aim is to understand this Silicon Valley model of innovation in various contexts and the way it is shaping technology startups and their products. In Chapter 3, I explain how I investigated this phenomenon *in situ*, by conducting fieldwork within accelerators.

CHAPTER 3. A STUDY OF THE GLOBAL STARTUP SCENE

In this section, I describe my approach to the research I've been conducting on accelerators and startups at different field sites globally since 2013. I first provide my perspective on the ethnographic approach, highlighting, among other things, how the theoretical findings I will present emerged from my fieldwork. I then paint a picture of my two primary field sites, accelerators based in Singapore and Buenos Aires, Argentina, and the fieldwork I conducted there. This is all supplemented by various other interviews I've conducted and events and site visits I've made in Silicon Valley and many other places globally over the two-and-a-half-year course of this research. I discuss the different forms of data that were collected and the data analysis and synthesis that ensued. And finally, I highlight the importance of "being there" in these places and how these experiences impacted me personally.

3.1 An Ethnographic Approach

There are continuing debates as to what ethnography, ethnographic methods, ethnographic fieldwork, and etcetera are both within the anthropology community and in academic circles beyond, as well as among practitioners in industry (Ingold 2014; Ladner 2014). So, I want to be clear about my research approach and what I mean when I say I took an ethnographic approach.

My overall approach to this research has been ethnographic in my focus, data collection, and to a large degree, analysis and synthesis. I have been studying the phenomenon of the explosive growth of startup accelerators globally and the impact they are making. This means I have been studying those involved in accelerators— as personnel,

managers, mentors, investors, and, of course, the startup founders and their teams. In doing

so, I am not "studying down," as traditional anthropologists did back in the early 20th

century, or "studying up" into elite power structures, but rather "studying sideways" (Nader

1972) into what Ortner (2010) and others consider 'the knowledge class' or professional-

managerial class. This work has been multi-sited and comparative in the sense of getting a

more holistic view of the global spread: what's similar, what's different. And, like other

multi-sited ethnographic work (Marcus 1995), it is from tracing such stories at the micro-

level that findings begin to emerge with regard to different macro-level contexts.

By an ethnographic approach to data collection, I mean that my research was

fieldwork-centric. I used a host of what are considered core ethnographic methods in data

collection, including, but not limited to participant-observation. And through this, I

gathered rich, detailed data that can only be gotten by "being there" (Borneman &

Hammoudi 2009). The embodied experience is a hugely important one, and I will discuss

my experience of that more later in this chapter, but it is important to note that the

"ethnographic sensibility," goes beyond the embodied experience. It is also an "intellectual

(and moral) positionality—a constructive and interpretive mode—as it is a bodily process

in space and time" (Ortner 2006, p. 42). The material that emerges from ethnographic work

is often described in terms of its "thickness," first described by Geertz (1973). The data is

rich and detailed— and importantly, contextualized. It goes beyond description, as

ethnography is "not just simply to watch people or interview someone or assemble a focus

group or 'shadow' someone, but a much more all-encompassing and demanding way of

knowing" (McGranahan 2014, p. 24). Personal reflection, reaction, interaction, and emotion

also play a role.

In analysis and synthesis, my approach is also largely ethnographic: writing, writing, and rewriting were huge components of developing the themes focused on herein and the broader theories that emerge from them. As Nader notes, ethnography is "not just description; it's a theory of describing (an intellectual process)" (2011). But this research is also largely informed by grounded theory methodology (Charmaz & Mitchell 2001) in that I also utilized coding and analysis methods that are particular to grounded theory methods, and my overall synthesis and focus is intended to be more patterned than descriptive. Thus, while my research approach is ethnographic, the end product is not what would be considered 'an ethnography' (Ladner 2014). Rather than focusing on meaning and interpretation, as an ethnography would, this research is very much rooted in analysis of patterns and synthesis.

In following sections, I detail my specific sites, activities, and processes, but it is paramount to this work to highlight that the themes and theories I describe emerge out of the fieldwork I conducted and the data I collected. I began with the following broad research questions about accelerators as phenomena:

- What elements of Silicon Valley do accelerators emulate?

- What elements work well, and where does emulating this ideal type create tensions when implemented in different contexts?

- What new properties and practices emerge from accelerators in different contexts?

Focusing on these questions guided the research, but the themes presented in this dissertation emerged from conducting the research. In line with Da Col and Graeber (2011) and McGranahan (2014), I argue for ethnographic practice before theory. That is to say,

ethnographic insights: "arise out of translating the untranslatable from the inside out rather than outside in, thereby challenging us to think anew about what we collectively know about the world and how people live in it. Theory is generated in fieldwork rather than (solely) imported from the outside" (McGranahan 2014, p. 29). That is, they insist good ethnographic research must begin with looking at the concepts that ground people's behaviors, views, words, and lives and how they are shaped by the larger context.

3.2 From Silicon Valley to Southeast Asia and Latin America

As noted, the bulk of this work is centered on in-depth fieldwork I conducted at two international accelerators in 2013 and 2014: JFDI.Asia, a Singapore-based accelerator and NXTP Labs, a accelerator based in Buenos Aires, Argentina. Here I aim to give some more detailed background and context about each of these accelerators, and then provide an overview of what it meant to do ethnographic fieldwork there.

3.2.1 JFDI in Singapore

Singapore is one of the fastest-growing Asian cities for startups. It is the top Asian city in the Global Innovation Index (INSEAD & WIPO 2012), and it has one of the highest percentages of international founders that have previously lived in Silicon Valley at 33% (Startup Genome 2012). It also is the hub for most Southeast Asian startups due to national innovation policies that support immigration of high-tech entrepreneurs. The Joyful Frog Digital Incubator, better known as JFDI.Asia, or simply JFDI, is the longest-established accelerator in Southeast Asia, established in Singapore in 2012. It focuses on creating "mobile and digital products and services made in Asia, for Asia."

Figure 3.1: Demo Day at JFDI

The program at JFDI is largely based on the TechStars model of acceleration, which has a collocated cohort. It runs for 100 days and is geared to guide startup teams from ideas to fruition of an investment-level digital product. It has a highly competitive application process through which a handful of teams are chosen to form the cohort. The bootcamp provides a core curriculum and intensive mentoring, connecting these teams with a large community of over 150 mentors and investors. Each team receives pre-seed investment (about US$25,000 when I was there) in return for an equity stake, which can vary per team. It was started by a consortium of 24 investors from Singapore and the USA and has also benefited from private and government grants. JFDI is situated in Block 71, a government-subsidized space near National University of Singapore and Singapore's A-Star research

facilities that is well-known for its startup presence. JFDI's space serves as both the accelerator bootcamp space as well as a co-working office for other startups and a meeting/ event space for others in the startup ecosystem. It is always bustling.

I observed JFDI's third "batch," its cohort of teams going through the program, which took place September through December 2013. Table 3.1 shows the teams and a brief description of the products they presented at the Demo Day in mid-December (Figure 3.1). In many cases, the product was quite different at the beginning of the batch, and many have changed or folded since the batch finished. I got to know most of these teams very well over the course of the program. However, two teams dropped out during the course of the program: VisualMarks, which I never really got a chance to know, and CloudJay, who dropped out a little more than half-way through, but continued to develop their product after returning to Vietnam.

The teams generally consisted of two to five members. All had at least two co-founders, and some added additional team members, particularly developers, as they grew over the program. It is important to note that JFDI's teams come from all over; it is a highly international program. At the time I was there in 2013, applications had come from 58 different countries, and during the three batches that had been completed by the end of my time there, individuals from 14 different countries had participated. The cohort of 10 teams observed comprised individuals from Canada, France, Germany, India, Malaysia, the Philippines, Singapore, Taiwan, Thailand, the US, and Vietnam. Some of the teams had a mix of people from different national backgrounds. Others were from the same place.

Likewise, the community that JFDI has built is highly international. The JFDI team consisted of two founders, a program manager who worked directly with the teams, an

Table 3.1: Teams at JFDI

	Team name	Description
1	CloudJay	A platform to help those in the field at construction sites collaborate with logistics personnel
2	enMarkit	A social ecommerce platform that helps websites create a user community for trusted recommendations in India
3	Healint	A healthcare application that uses smartphone sensors to monitor neurological conditions, such as stroke survivors
4	MOLOME	A social meme generator and photo-sharing platform for selfie photographers
5	Qwikwire	A cross-border payment platform for the Filipino diaspora
6	Obatech	A consumer analytics and engagement platform for the pharmaceutical supply chain in Indonesia
7	Skimbl	A quality-control monitoring platform for food and beverage management in China
8	TapTalents	An enterprise knowledge-sharing and training platform for sales professions utilizing the BYOD (bring your own device) movement
9	VaultDragon	A consumer self-storage solution through a digital platform
10	VisualMarks	A visual storytelling platform that provides an immersive writing, styling and reading experience

event manager, an investor relations manager, a social media specialist, and an administrative person who managed the coworking space and accounting. It's two founders, Hugh and Meng, are British and Singaporean, respectively, and have worked and lived abroad in many different places. Meng, considered the "Social Engineer" of the program notably lived and worked in Silicon Valley for many years and successfully founded several companies. Ray, the manager who worked hands-on with the batch, is

Taiwanese, but had previously lived in Europe and the US. He was part of the original team of Lean Startup Machine, a program that has promoted Lean Startup processes globally. Chiah Li, who handled investor relations, and Fannie, who managed events and other aspects of the program, were Singaporean. The office space of JFDI was always bustling with others using the co-working-space, particularly alumni of the program, and mentors and investors coming in and out for meetings, some locally-based,

Figure 3.2: JFDI's Mascot Smoochy

and others in town from places all over Asia and the world. Lots of other startups located in the Block 71 space would also drop in for a coffee at the cafe the JFDI team had built inside. And there were events all the time, drawing people from startup communities all over the world to come hang out, chat, and take photos with Smoochy, JFDI's lovable mascot (Figure 3.2).

3.2.2 NXTP Labs in Buenos Aires

NXTP Labs was founded in 2011 by a group of 80 angel investors, headed by 5 main partners. It is one of the three largest and best-known accelerator programs in Latin America. Similar to JFDI, it focuses on creating digital technology startups for a Latin American (LatAm) market. This broader market is considered to include most of Spanish-

speaking South America, Mexico, and Central America, but not Brazil. At the time I was there, they had fostered over 140 startups coming from 15 different countries over the course of six batches, the most famous alumni being teams like Wideo, a tool to make online videos, and Mural.ly, a brainstorming tool, both of which have had larger, global success outside of Latin America. The office is located in Palermo Soho, a nice, trendy neighborhood of Buenos Aires, where startups have been sprouting up. The office was a bit small for the amount of people often there, and although it wasn't an open co-working facility for those not involved with the accelerator, it did host events for the larger startup community.

NXTP was structured similarly to JFDI, with the focus on providing seed funding (~ US$25,000), workshops and training, mentoring, and other resources to it's cohorts in exchange for an equity stake. Like JFDI, the process was highly competitive, but NXTP's batches were a bit bigger, with somewhere from 300 to 400 teams applying for approximately 25 open spots. The program itself typically runs about 14 weeks and includes around 20-30 teams. But at the time of the start of the sixth edition, things were changing a bit. The partners at NXTP had begun to move "from a Y Combinator to a 500 Startups model" according to Arturo, the program manager, meaning they were moving from being an intensive bootcamp, to trying to be structured more like a VC firm[2]. As Arturo said, "We want to be investors, not fathers." They were overwhelmed personnel-wise with the level of dependence of some of the startups in their portfolio, so that had started to look at more mature teams to invest in, in addition to fostering some "green" startups. So, the "cohort" I followed was not as clearly defined as at JFDI.

---

[2] 500 Startups, while sometimes being referred to as an accelerator, is actually a VC fund. It does not regularly run any sort of program for the startups it invests in.

I observed NXTP's sixth edition (their name for their cohort, similar to "batch"), from March through June 2014. The batch technically included 27 teams total, but due to this changing structure only 17 of them really participated in the accelerator portion; the other 10 were primarily investments and were not there for the program, although some were involved with support staff and mentors through NXTP to some extent. These teams included Auth0, Blink, CocodriloDog, Fundacity, Klooff, Mon.ki, SegundoHogar, Transparent Outsourcing, TuTanda, and WePlann. The 17 teams that participated in the program are listed in Table 3.2.

Like JFDI, the teams were typically anywhere from two to five members, with at least two of them being co-founders, sometimes three. These teams came from all over Latin America, as well as from the US and Europe. Notably, Posto7 was American, and MonoLibre was European. All the other teams were based in Latin America and were from there. While many were co-located throughout the program, a few primarily remained in their home or market locations around Latin America, participating in activities remotely and only coming to Buenos Aires occasionally for events. Another few left over the course of the program when they felt they needed to focus their attention elsewhere, including TusReQRdos and WinAd, who both returned to Colombia, and Posto7, who returned to Miami towards the end of the program to focus on fundraising. Only 10 of the 17 teams participated in Demo Day in June 2014; the other handful were going to continue with the program through the course of the next batch and participate in a Demo Day later on, when they would be ready for fundraising.

In addition to the teams, I got to know the accelerator personnel, who are all Argentine, to varying degrees. These personnel included five cofounders, the program

Table 3.2: Teams at NXTP

	Team name	Description
1	Aventones	An online car-pooling system to organize and communicate with coworkers to find routes, schedules, and empty spaces safely
2	CookApp	A mobile platform that lets people coordinate a social dining experience at anyone's house
3	Gorsh	A curated online gift store focused on emerging designers
4	Koibanx	A bitcoin- based mutual investment fund whose performance is linked to the evolution of the value of digital cryptocurrency
5	MeroArte	An art marketplace connecting Latin American artists with art buys and aficionados all over the world
6	MiTurno	A mobile waitlist and reservations management tool for restaurants
7	MonoLibre	A game-based language learning software program focused on pronunciation using complex language algorithms
8	NearWay	An SaaS platform that allows businesses to communicate through text and pictures with users in the field using their smartphones
9	Posto7	A social-network based recommendation tool to share your favorites restaurants, hotels and nightlife venues with only your closest friends
10	Qool	A synchronized dashboard collaboration tool for teams working on Windows 8 devices
11	Real Trends	A suite of tools that help online retailers to sell more efficiently
12	Retargetly	A data management platform and marketplace for making big data actionable for companies
13	Solapa4	A knowledge management service for agribusiness that utilizes a flexible algorithm to combine GIS data sources for actionable decision-making
14	Solidmation	A hardware and software platform for automation in the home
15	TusReQRdos	A tool to create biographical memories online

Table 3.2: Teams at NXTP

	Team name	Description
16	WinAd	A platform to connect users and brands through advertising contests
17	Zolvers	An online marketplace that allows users to outsource small jobs and tasks to others

manager, the team coach, an event manager, a portfolio manager, and a legal advisor. The staff I got to know best were the ones who worked most with the teams— primarily Arturo, the program manager, Gabi, the teams' coach, Leila, who worked in events and support, and Fran, who helped coordinate activities and managed the portfolio and tools the group used. The founding partners were also around from time to time, particularly Ariel, Francisco, and Marta, although Gonzalo and Martin did more work behind the scenes and abroad, connecting teams. There were a host of other personnel affiliated with the program, but they primarily worked within NXTP's marketing business, a separate company operating under the same name.

3.2.3 Fieldwork

At both JFDI and NXTP, I utilized a variety of ethnographic methods in my fieldwork. This included a great deal of naturalistic observation of the daily goings-on of the accelerators and affiliated events as well as participant observation when possible. These day-to-day activities included things such as weekly check-ins with each team and workshops, which happened frequently at both field sites. In weekly check-ins, the teams would go over their progress, discuss goals and strategies, and get feedback from the managers. Workshops happened all the time and focused on topics spanning business development, product development, marketing, finance, law, etcetera. I observed many

other activities, like mentoring sessions, investor meetings, and pitching sessions and larger, community-oriented events, like open houses, alumni meetups, special events, and Demo Day. To the extent that I could participate alongside the startups, I involved myself those activities, like participating workshops and training sessions and providing feedback in pitching sessions.

Additionally, I participated in a mentor/advisor role, providing feedback, particularly around issues having to do with user research, user experience (UX), and design. I gave a couple of brief workshops centered on some particular pieces of these, as well as on project management. I conducted open-ended and semi-structured interviews throughout to get a sense of people's individual perspectives and thoughts, and I also used contextual inquiry approaches as they applied to looking at the development of specific teams' products over the course of the program. In total, I spent over 300 hours at each of my field sites over the course of their programs, following 26 teams, and conducting interviews with over 60 people.

In addition to my time at each specific site, I got to know the larger ecosystems of Singapore and Buenos Aires. I kicked off my time in Singapore meeting a variety of influencers and startups participating in the Tech Venture Conference, where I met Professor Low Teck Seng, the head of Singapore's National Research Foundation (Figure 3.3). I attended lots of other events and lectures centered on startups and technology around JFDI's location in Block 71 and elsewhere in the city, variously hosted by National University Singapore, INSEAD, Google, Singapore's National Research Foundation, Microsoft, Lean Startup Machine, and others. I got to know and visit other startups in the city, particularly through other groups like the HUB and Singapore's Hackerspace, which

Figure 3.3: Singapore's Techventure Conference

Angela Ognev of Strikingly, me, and Professor Low Teck Seng, the CEO of Singapore's National Research Foundation, at Techventure in Singapore, a major Asian conference showcasing Singapore's technology startup ecosystem.

was a very familial, friendly space in the Arab Street area of Singapore founded by JFDI co-

founder Meng. Similarly, at NXTP I visited other sites like Qasar Ventures, Google, and co-

working spaces to get to know the startup and tech communities in Buenos Aires more

broadly. I attended events like Buenos Aires's big startup conference, Red Innova, and

smaller events hosted by Startup Grind, Startup Weekend, Sandbox, etcetera.

3.3 A Larger Global Picture

My data collection on this project began well before I landed at my first field site in

Singapore, and has lasted well past the time I left NXTP. In addition to my fieldwork in

Singapore and Buenos aires, over the past couple of years I conducted foundational

research in Silicon Valley, and have participated in a number of startup ecosystem events in

Southern California, and have had the opportunity to interview many others from other

startup ecosystems and accelerators— and occasionally visit them as well.

3.3.1 Silicon Valley

Since this work is rooted in notions central to Silicon Valley, I conducted some

foundational research there before venturing to JFDI in Singapore in summer 2013. Here I

use Silicon Valley as a metonym for the larger region that encompasses the technology

industries and communities located in the greater Bay Area, including San Francisco, Santa

Clara, and San Mateo counties. I had previously spent time in the area during my

internships at Google and had come to know many people involved in the startup scene

there, particularly in the South of Market (SoMa) area of San Francisco[3], including close

friends involved in StartupBus and StartupHouse, and who had founded their own startups

either there or abroad, and had moved to relocate them. Through these contacts and other

networks, I was able to conduct interviews with a variety of personnel involved in

accelerators and participants who had gone through them, including alumni of Y

Combinator and Techstars, as well as other accelerators that had emerged in the Silicon

Valley region and individuals involved in some of Stanford's startup efforts, including

Startup Garage (an undergraduate course being advised by Steve Blank) and StartX,

Stanford's non-profit accelerator. I later participated in a Stanford MOOC course that was

run by Y Combinator. These initial interviews and background research helped me get a

sense of the Silicon Valley ecosystem and the emergence and roles of accelerators more

broadly, which was valuable in informing my research at my two main fieldsites.

---

[3] SoMa is a neighborhood in the eastern part of San Francisco, where a great deal of startups have become
located in recent years.

3.3.2 The SoCal Startup Scene

Beginning in early 2013, I began to actively attend events and meetups locally to get a better sense of the startup community in Southern California. This included a variety of events hosted by on-campus organizations at University of California, Irvine, (UCI) and through the Paul Merage School of business there, such as the Students to Startups Workshop series, hackathons, app jams, and other events. I also attended a UCI-hosted Startup Weekend. Beyond UCI, I got involved in a number of other startup speaker series and events such as those run by K5 Ventures, an Orange County-based accelerator, the Tech Coast Venture Network (TCVN), OC Hackerz, the Eureka Building, an Orange County co-working site, and 106 Miles, a group that connects SoCal startups to Silicon Valley. Outside of Orange County, I participated in a number of events in the greater Los Angeles area of the past couple of years, primarily in the Santa Monica area. These include Fireside Chats hosted by LA's Campfire Tech Community, Designers & Geeks meetups, and events hosted by Amplify, Opodz, General Assembly, and more. These various events, many of which are open to people just becoming acquainted with the SoCal startup community, provided me with a stronger foundation to understand the OC and LA ecosystems and how they have developed as well as a network of contacts to ask questions.

3.3.3 And Beyond

Supplementing all of this are a number of interviews and sites I have visited over the past couple of years with a range of other programs, based in North America, South America, Europe, Africa, Australia, and other parts of Asia. Much of this has been serendipitous in nature at various startup events at my field sites or other places. In travels in Asia, I was fortunate to meet with people involved in accelerators and the larger startup

communities in Tokyo, Taipei, Kuala Lumpur, Manila, Shanghai, and Seoul. In Tokyo in particular, I ran a workshop on Startup Ecosystems that gave me a broader insight into the ecosystem there. I also got a much more in-depth view of Korean startup scene through the participants of K-Celerate, a mini-accelerator sponsored by the Korean government being run at JFDI while I was there. Similarly, in South America, I was able to connect with a number of people involved in Startup Chile and the Colombian ecosystem, which NXTP was heavily connected to. And while traveling to Lima, I was able to connect with people doing startup work in much less developed regions of South America.

Whenever I have traveled for a conference or other reasons to other regions globally, I have sought out meeting with any accelerators I can during my stay. In Australia, I was able to talk with startups at FishBurners, a major co-working space in Sydney, as well as meet with the founder of StartMate, one of the leading Australian accelerators. When I traveled to South Africa for a conference, I was able to talk with the managers of 88MPH, a premier accelerator based in Cape Town and backed by Google. I also met a number of people involved in the larger ecosystem there as well as in Nairobi at iHub and startups coming from other, less-well known places, like Mozambique. And in North America, I've gotten to know the ecosystems outside of California a bit, particularly Chicago and New York, through visits and connections there. While I haven't had the opportunity to visit European accelerators, I have met many involved through their visits to these other places. The global startup community is large, but it is also close-knit and highly interconnected in many ways. The additional interviews and discussions I've had with people from all over the world have given me a larger contextual view of the startup scene, globally.

3.4 Rich Data, Analysis & Synthesis

All of these various sites, activities, and people have given me a rich collection of data. At my field site, detailed fieldnotes were taken throughout all of these activities over the 600+ hours of onsite work. These are augmented by informal and semi-structured interviews with the teams and accelerator personnel. At accelerators, and within startup communities in general, there is a focus on gaining publicity, so there are also lots of videos, photos, and audio available as resources, in addition to recordings and photographs I took myself. Since the accelerator programs are managing a great deal of data and information, there is a plethora of other documentation and data on what they are doing. At JFDI, for instance, Google Docs was used to host all sorts of documentation and collaboration between the teams and the accelerator. They also have various mailing lists and the OpenFrog community, a message board for startups more broadly. At NXTP, they used a combination of Google Docs along with Dashboard.io as their platform to manage communications between mentors, advisors, personnel, and the teams. Both of these provided a great deal of documentation on everything that was going on, in addition to all sorts of other handouts produced at workshops and other events and materials, like slide decks for pitching. Finally, there were also material artifacts being produced. The activities in accelerators focus on developing Minimum Viable Products (MVPs), which are essentially early prototypes, all the way to fully-functioning technology products. These products provide rich data and detail about the process over the course of the program.

Utilizing this data has required a number of steps throughout the processes of analysis and synthesis. As I have noted, I have taken an ethnographic approach in general to my research, but to analysis and synthesis, I have also utilized grounded theory methods.

Where I draw the distinction here is that much of my focus is to identify patterns of phenomena, which is a goal of grounded theory methods. Ethnography as a product, by contrast, is more widely considered to focus on meaning and description (Charmaz & Mitchell 2001), though both are similar and complementary in a number of ways. Iterative memoing was used throughout my fieldwork to develop, challenge, and revise theories arising from the data. As I worked on specific segments of this research, I utilized grounded theory methods, beginning with open coding and moving to closed coding to analyze the content of certain larger themes. I built theory based on these patterns emerging from the data along with intensive literature review.

3.5 The Importance of 'Being There'

Finally, I want to highlight my role as an ethnographic researcher and the importance of 'being there.' The experience of fieldwork is transformative— both intellectually and emotionally (McGranahan 2014). There are a-ha moments where you understand something you never did before. There are positive encounters and conversations that build strong empathy. And there are also disruptions and unsettling events. Throughout my fieldwork at both sites and with all the startup communities I've encountered, I felt a sense of openness and openmindedness. As a researcher, this was great in terms of access and just having a general feeling of being welcome that doesn't always happen in fieldwork. But this was not without its bumps.

At JFDI, conversations were relatively easy. While English wasn't everyone's first language, English, (or for those native to Singapore, a hybrid affectionately referred to as Singlish) was the official business language and the language in which everything at JDFI

was conducted. Despite my training in Spanish and over a year spent in Spain, I did not have it so easy in Argentina. The Argentine tongue, and in particular, the slang, threw me for a loop sometimes. Although, in the startup world, English is clearly still a key skill. All the teams at NXTP had to speak English to be able to pitch to investors. Meetings I observed sometimes became a hybrid, with lengthy Spanish streaks peppered with distinctive startup vocabulary words like "cashflow," "funnel," or "MVP". But language wasn't the only shock.

Just a few weeks into my stay in Buenos Aires, my apartment was robbed. Out to dinner with a friend, I returned to an open door, my power disconnected, and all of my technology equipment— yes, including my laptop— and many other personal belongings vanished. It wasn't just a random crime. I had been watched and targeted as a foreigner with some high value items. Before I was able to move to a more secure location, I was targeted a second time. My power was cut off through a breaker downstairs, at the entrance to the building, while I was asleep. With the couch pushed up against the door, no one had managed to break in that time and I built up enough courage to go reconnect the electricity, but it was terrifying to be alone in a place and negotiate these sorts of challenges. I moved out a day later, and the apartment was in fact broken into again, just after I left.

I knew Argentina, and Buenos Aires in particular, were going through some crises economically, but there was also a major wave in crime. These events all happened within the same week that the city authorities declared a state of emergency due to violent crime[4]. I am divulging this story here not merely as an illustration of the harsh realities of doing

---

[4] For more information on the crime wave and state of emergency in Buenos Aires in April 2014, see http://rt.com/news/buenos-aires-state-emergency-301/

fieldwork— which can clearly be difficult, even among a community so benign as startups. I bring it up to note the shocking perspective change it provided, the way it challenged things I had taken for granted.

In the ensuing conversations and processes that followed this series of events, I found out the difficulties the environment in Buenos Aires posed for the startups I was studying. One developer explained to me how he kept a hard drive at the office, another at home, and a smaller one he carried in his bag in between. That way, if his place was robbed, or if he was mugged, the most he would ever lose was a day's work. While everyone at NXTP was really helpful and sympathetic to my situation, it was clearly not an uncommon occurrence.

I also found out how difficult access to hardware can be in Argentina. Ultimately, due to the lack of availability and the exorbitant taxes on a new MacBook, I had to enlist a "mule"— someone to covertly bring a laptop from the US. In return, on my trips back to the US for a few conferences, I was enlisted to bring needed pieces of hardware and peripherals. The coordination required to access such simple things as a new projector dongle were eye opening. Though I wish I hadn't gone through some of the experiences I did, these experiences brought to my attention things that I would have taken for granted. In short, 'being there' is a key — it both enables the intellectual journey of understanding at a deeper level and belies the transformational process of learning through experience.

CHAPTER 4. A FRAMEWORK TO DESCRIBE SILICON VALLEY AND

ACCELERATORS' ATTEMPTS TO REPLICATE IT

"Innovation is not chemistry. It is alchemy."

- Bruno Lanvin, Executive Director, INSEAD, at an event in Singapore

Silicon Valley is a complex ecosystem that has evolved organically over the years. In this first data chapter, I present the main components of the Silicon Valley ecosystem at a high level of abstraction. In the first section, I highlight how they emerged, the roles they play in the ecosystem, and how they are interrelated. Using this framework, I start at a high level of granularity, discussing the ways in which accelerators attempt to emulate Silicon Valley in different contexts globally in the second section. I provide examples from my fieldwork in Singapore and Buenos Aires as well as from my research on other accelerators globally to illustrate these phenomena. Finally, I highlight how the homogeneity among accelerators globally is shaped by the mechanisms of *institutional isomorphism*. Uncertainty and other pressures of the technology startup world encourage imitation in the hope of gaining legitimacy. But at the same time, differences in location and focus shape accelerators' individual identities.

4.1 Components of the Complex Silicon Valley Ecosystem

A great deal of research has focused on the development of innovation ecosystems, as previously discussed. Many of these studies focus on the key elements to creating (or evaluating) an ecosystem. For instance, a recent study by the Aspen Network of

Development Entrepreneurs reviewed nine major frameworks for understanding and evaluating entrepreneurial ecosystems that had been developed by a range of universities, industry associations, and NGOs alike. They mapped the individual indicators into primary domains and synthesized all of these into 8 major determinants: finance, business support, policy, markets, human capital, infrastructure, R&D, and culture (Aspen Network of Development Entrepreneurs 2013). But none of these fully encompass all the aspects of Silicon Valley that have shaped it as an innovation ecosystem, so I have created one.

Based on a synthesis of determinants from sources such as this and others (see section 2.1.1) and a thorough review of literature on Silicon Valley and themes that emerged from my research, I created a framework (Figure 4.1) to illustrate the main abstract components that play a role in how people attempt to emulate Silicon Valley's ecosystem. These components include:

1) Technology

2) Regulatory environment

3) Social environment

4) Infrastructure/ Physical environment

5) Capital

6) Networks

7) Culture

8) People

9) Practices

In the following sections, I explain how much of this is rooted in the organic development of the region over its history, but I aim to highlight the importance of each in the global views
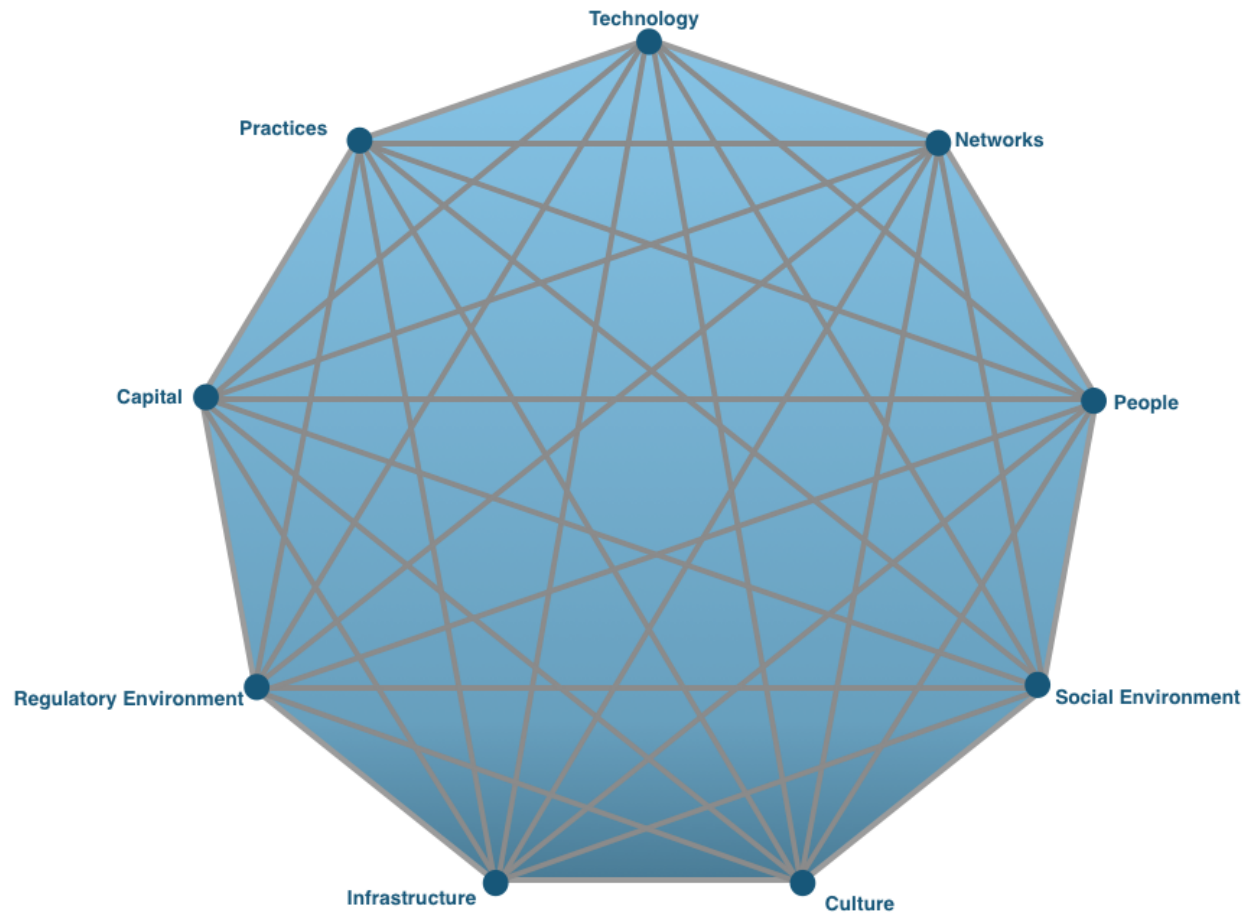
Figure 4.1: Silicon Valley Ecosystem Components

of Silicon Valley today, and how these play a role in why it is emulated. This framework is not intended to be exhaustive or exclusive, but rather present a fruitful way of looking at Silicon Valley and how it is emulated. I will now discuss these in turn in the following subsections.

4.1.1 Technology and Technology Access

Since the first dotcom boom, a variety of technology advances have lowered the actual costs and reduced many barriers to creating a startup (Cervantes 2013). Low-cost cloud computing platforms provide data storage, computation, and networking, reducing

the need to invest in physical servers and infrastructure. While cloud infrastructure companies like RackSpace have been around since the 1990s, Amazon pioneered the low-cost infrastructure as a service (IaaS) model in 2006 with the introduction of its Elastic Compute Cloud (EC2, now known as Amazon Web Services). Since Amazon's infrastructure was developed to support peak retail times, like Christmas, it aimed to monetize its idle capacity to balance out retail surges (Kushida, Murray, & Zysman 2012). Since then, other major players have come out with their own IaaS cloud services, such as Google Compute Engine and Microsoft Azure, driving the cost even lower. Some investors in the industry estimate that creating a software startup in 2015 costs ten percent of what it cost in 2005 (Scheiber 2015).

Barriers to development and distribution have been lowered too with the rapid spread of programming frameworks and their application programming interfaces (APIs) and software development kits (SDKs). Web APIs in particular have enabled service combinations called mashups, facilitating easy-to-create Web applications (Benslimane, Dustdar, & Sheth 2008). Meanwhile, code sharing repositories like GitHub, which launched in 2007, and Q&A sites like Stack Overflow, created in 2008, have emerged as knowledge-sharing platforms for developers, helping productivity. All of these, along with the rise of easily accessible digital marketing platforms, social networking sites, and distribution channels like the App Store and Google Play, have combined to create a technology environment that has dramatically reduced costs and barriers for would-be entrepreneurs to create software startups.

In theory, one could create a startup from anywhere with a decent high-speed internet connection. But not everywhere has the cheap, fast, reliable technological

infrastructure that exists in Silicon Valley. That is taken for granted, as is access. People in

Silicon Valley have easy access to tools, hardware, and other technology-intensive

equipment. Smartphones and the newest devices are ubiquitous. Developers from all over

the world come to Apple's Worldwide Developer's Conference (WWDC) and Google I/O to

find out about emerging, cutting-edge technologies. And startups who are based in Silicon

Valley use the latest developer technologies. As one startup founder said to me recently:

"Everyone is using Angular," referring to the open-source web application framework

introduced by Google. "Who uses PHP?" Silicon Valley is a test-bed for technologies. They

are designed for this population and first introduced here, giving the locals first advantage

in using them.

4.1.2 Regulatory Environment and Policy

Regulatory bodies and policy within Silicon Valley and more broadly, within the US,

have played critical roles in the shaping of region. These encompass everything from taxes

and investment incentives to legal mechanisms to protect entrepreneurs to immigration

policy.

In general, tax systems and legislation impact entry into entrepreneurship. Much

research has shown how lower tax rates and low capital gains taxes have played a role in

increasing startups and entrepreneurship in the US (Shane 2000; UP Global 2014). Over the

years, legislation has also shaped the investment side. A 1979 policy allowed pensions to

invest in venture capital (VC) funds and the 1981 Economic Recovery Tax Act lowered

capital gains rates, stimulating the VC market (Armour & Cumming 2006). More recently,

US tax law around "qualified small businesses" has created tax breaks to encourage

investment and reinvestment in early ventures (UP Global 2014). While the Sarbanes-Oxley

legislation of 2002 increased regulatory requirements broadly in the wake of the scandals

like Enron and Tyco, the 2012 Jumpstart Our Business Startups Act (JOBS Act) reduced

many of these for startups, although it's more commonly associated with enabling the

emergence of crowdfunding.

While US legislation has broadly played a role in incentivizing or de-incentivizing

startups and investment over the years, the particular legal environment of Silicon Valley

has impacted the region more directly. Lawyers have played a large role in the political

economy of the valley. In particular, Kenney's (2000) historical account highlights the law

firm of Wilson, Sonsini, Goodrich, and Rosati (WSGR) as an import source of legal

innovations to help startups. When Robert Noyce and Gordon Moore left Fairchild to create

Intel, they felt Fairchild did not have an adequate reward structure for engineers, so they

wanted to make sure there was a greater ownership stake for entrepreneurs. WSGR created

the contracts to do this and other legal mechanisms to protect entrepreneurs and venture

capitalists alike. Sonsini in particular gained further notoriety in the 1980s for handling the

initial public offering of Apple, setting a precedent in the technology world for how legal

work would be done. The strong legal environment of Silicon Valley has shaped the types

and volumes of investment being made there, and impacted the way funders and startup

interact.

Intellectual property rights, and patents in particular, are a major focus in the legal

arena. However, in Silicon Valley, there are contradictory approaches to this. On the one

hand, lots of patents are filed. Annually, Silicon Valley has most patents per capita of

anywhere in the US (Rothwell, Lobo, Strumsky, & Muro 2013). But on the other hand, there

is a sense that patents are generally unimportant in the ever-changing world of software

and that ideas in particular are public goods (Horton 2014). Silicon Valley in general has very open attitudes about sharing ideas, particularly among startups. Those who study Silicon Valley have suggested that there is "a pervasive mindset among entrepreneurs and VCs alike that 'ideas don't matter' and that what matters is execution" (2014). In fact "Intellectual property (IP), in its traditional definition as property rights, was not as crucial as know-how, time-to-market and user adoption" (Engel & Forster 2014, p. 53). Peter Thiel, one of the co-founders of PayPal who became a major investor, has famously noted that "there are no NDAs in Silicon Valley," referring to the non-disclosure agreements. People are open and things are fluid, not vertically compartmentalized (Thiel & Hoffman 2012). It is widely thought this sort of idea sharing promotes both competition and open collaboration.

Finally, labor regulations also play a role in Silicon Valley as an innovation ecosystem, and one of the key aspects of that is immigration. As Saxenian has underscored throughout her research, high-tech immigration has had a tremendous impact on innovation in the Valley over the years. However, national immigration policy has limited the high-tech immigration flow. Tech workers typically need an H-1B visa, and in 2014, the cap on H-1B visas was reached less than a week after applications opened (Johnson 2014). Silicon Valley has continued to lobby nationally for immigration reform and an emphasis on the importance of immigration, national diversity, and recruiting top talent globally continue to be a focus.

4.1.3 Social Environment

"The geographic location in which a startup is based influences many things. Existing infrastructure, business laws, taxation policies, and immigration

policies are clearly important ones. But the more subtle aspects related to

culture and societal views are just as important." (Feld 2012)

The ecosystem of Silicon Valley has very much been shaped by the social

environment of San Francisco and the Bay Area over the years. Dating back to the gold rush

of 1949, it has been rooted in an ethos of entrepreneurship (Turner 2008). The

counterculture movements of the 1960s and 1970s had a profound impact on the

development of the technology sector in particular, especially in terms of collaborative and

communal ideals (2008) and exposing people to new and different ideas, like those found

in the Whole Earth Catalog (Markoff 2005). Other aspects of the social environment, such

as the common use of drugs like LSD shaped beliefs, attitudes, and behaviors about

experimentation (2005). Alongside all of this, equal rights movements and political protest

all played a historical role in shaping the unique environment surrounding that is the

Silicon Valley. The subsequent emerging hacker ethics guided knowledge and idea sharing

(Levy 2001). And importantly, the whole region was heavily influenced by the diversity of

people there (Wadhwa, Saxenian, Rissing, & Gereffi 2007).

Today, Silicon Valley still very much has that feel. There is still a counterculture and a

creative atmosphere, observed in things like Maker Faire. There's an openness and

embracing of difference. Everyone goes to Burning Man. Eric Schmidt was famously

selected as CEO of Google because he went to Burning Man (Ferenstein 2014). The hippie

and hipster culture is alive and well, and there is a broad sense of cultural acceptance, yet

also voicing opinions and protesting. These are all influential elements that impact and

shape the startup scene more broadly.

4.1.4 Infrastructure/Physical Environment

The physical environment and built infrastructure of the Valley also play a role in shaping the ecosystem. At a basic level, the infrastructure of the region is safe, reliable, and accessible. But the important point here is the physical spaces that create positive resource-sharing effects through proximity and density (Chan & Lau 2005) and serendipity encounters (UP Global 2014). Terman is credited with initially bringing university, government, and industry resources together in one space in the Stanford Industrial Park. These "Triple Helix Spaces" where various parties can encounter one another are important (Ranga & Etzkowitz 2013). But casual spaces for encounter matter as well. The semiconductor industry famously benefitted from the Wagon Wheel Bar and Grill as a space of face-to-face interaction that fostered competition and collaboration among Silicon Valley engineers in the 1970s and 80s (Castells & Hall 1994). Today structured spaces, like co-working spaces support interaction between different groups (Surman 2013). Coffee shops, where many startups sit and do work, create opportunities for serendipity of encounter and the cross-pollination of ideas. It promotes chance encounters among diverse people. As Silicon Valley has developed over the years, the importance of density of space seems more and more apparent as startups are clustering even more tightly around the SoMa area of San Francisco.

4.1.5 Capital

Access to capital is especially important at the seed stage of a technology venture, and Silicon Valley provides the most VC funding globally (Kramer & Patrick 2014). This funding occurs through established VC firms and corporate VC arms, as well as through wealthy individuals known as "angel investors." The origins of this began in the 1950s,

when "The Group," a small network of young investors began pooling investments in technology-focused startups in Palo Alto, becoming key players in the growth of the VC community there (Kenney 2000). By the 1970s, successes had spurred greater investment, and successful entrepreneurs started to become venture capitalists after "exiting," organically creating the "virtuous cycle" of capital funding in Silicon Valley. This continues today, with examples the PayPal Mafia, a group of former PayPal employees who went on to invest in (and found) many other successful startups (Lacy 2008).

This virtuous cycle explains why there is so much more seed capital available in Silicon Valley than other places, where people tend to put money in stocks, bonds, real estate, or other more stable ventures. VC investments are notoriously risky, with average returns well underperforming other investment vehicles (Huntsman & Hoban 1980). Entrepreneurs-cum-investors, however, tend to have a higher risk tolerance, which in turn helps spur innovation at a much higher rate than corporate R&D (Kaplan & Lerner 2015). According to previous research, VC tolerance for failure help startups "overcome early difficulties and realize their innovative potential" (Tian & Wang 2011). VC firms bridge the gap between entrepreneurs and financiers, dealing with "moral hazard" and asymmetric information (Lerner & Tag 2013). They screen startups, create contracts, stage funding, and closely monitor and advise the startups they fund.

For investors, it is a "home run" game (Huntsman & Hoban 1980): they depend on outliers, investments with the potential for extreme returns. Essentially, VCs and Angels make lots of small bets in hopes that one will become the next Google. And currently, early venture investment is on the rise; 2014 saw the most capital invested in the startup ecosystem since 2000 (Newcomer 2015). Other, recent changes to structuring capital have

also enabled angels to make more investments. Convertible notes enable them to invest in the form of a loan that converts to equity once another round of funding is raised (Feld & Mendelson 2011). This encourages investing in very early rounds, when the valuation of a startup is uncertain and unstable. So startups in Silicon Valley do not need to go elsewhere for funding.

4.1.6 Networks

Networks between different agents of action are a crucial element in Silicon Valley's innovation ecosystem. For instance, the components the "triple-helix" are often mentioned. This phrase refers to the institutional spheres of universities, industry, and government, which each encompass a wide-ranging set of actors (Ranga & Etzkowitz 2013). These are not "dense networks of civic engagement," but rather productive interactions between these entities (Lesser 2000). I emphasize not the entities, but rather their connections as being critical here: the networks that connect them and the opportunities for building networks between the actors.

Important actors include a far more wide-ranging group than the triple helix implies. In addition to universities, large companies, and government, the connections between startups and investors, mentors, advisors, partners, service providers, media, and other groups matter (UP Global 2014) at both an individual and higher entity level. These connections play many different roles of importance. Startups rely on their network for guidance in topics ranging from engineering to law to marketing as well as for finding services. Many startups hire from within their networks. And, importantly, it is easier to gain visibility with investors within your network.

This highlights another key role of networks: signaling. Tahvanainen and Steinert note: "[I]n Silicon Valley trusted referrals are key to signaling credibility and worthwhileness" (Tahvanainen & Steinert 2013, p. 21). Without such a network, it's far more difficult to get the attention of important stakeholders. Within Silicon Valley, networks are endogenous; they often emerge organically through collaboration and serendipity, particularly within the tight-knit community of entrepreneurs. In Silicon Valley, everyone is a potential connection (2013). Alumni of successful businesses play a particularly important role in connecting different groups (Lojek 2007), which can be important in connecting beyond the ecosystem as well. Individual movement and immigration have played important roles in building networks between Silicon Valley and other ecosystems (UP Global 2014). Castells and Hall (1994) note that, historically, while scientists and engineers would move between different companies, they typically stayed in Silicon Valley because of their strong informal networks there. Citing Saxenian's early work, they suggest these informal networks:

"constituted the very basis of the process of innovation in Silicon Valley, and they increased in complexity and importance over time. They were simultaneously channels of communication of technological innovation, forms of organization of the job market, and the material basis for the formation of a culture that emphasized the values of technological excellence and free-market entrepreneurialism" (Castells & Hall 1994, p. 18).

4.1.7 Culture

Over the years, a variety of attributes have combined to create a distinctive culture in Silicon Valley. The larger social environment, as described in Section 4.1.3, has played a

role in shaping this culture, but a particular culture of the technology field has emerged within this larger environment. In many minds, the success of the region is rooted in this: "the crucial role of the Valley's culture—which has stimulated entrepreneurial minds and companies in a host of ways that have led to unique, innovative businesses" (Harris & Junglas 2013, p. 3). A variety of scholars, Silicon Valley veterans, and others have delineated aspects of the culture. Here I highlight the most common elements from the literature.

One of the core elements is accepting, or even valuing failure. In Silicon Valley, a failed entrepreneur is seen as "experienced" (Fal 2013); a core part of trying something is failing fast and learning from it (Feld 2012). This goes hand-in-hand with having a positive attitude toward taking risks. Venture capital is one of the catalysts that fueled the growth of high tech businesses, and appetite for risk is rewarded handsomely. This is the foundation that brews the risk appetite of the Silicon Valley ecosystem (Ante 2008). As such, startup ideas should be risky and actually even repel you (Graham 2012). There is a pervasive attitude that these ideas should be disruptive, contrarian.

There are also broad cultural ideals centered on openness, networking, and collaboration. Cultural notions of openness and sharing are rooted more broadly in the hacker ethos that was embodied in the Homebrew Computer Club and other hobbiest groups (Levy 2001). These have been influential as Silicon Valley has continued to develop. Silicon Valley's embracing of a horizontal exchange of information allowed them to leverage innovation (Saxenian 1994). There is a general openness to sharing ideas and to meeting with people. The short lifecycle of startups in Silicon Valley reinforces the idea that long-term relationships must be with a larger network of people (Blank & Dorf 2012). Anyone can be important, and these connections are constantly being made in both professional

and private spheres (Tahvanainen & Steinert 2013). And these foster an atmosphere of constant collaboration. Open collaboration and porous boundaries, not closed systems, enabled Silicon Valley to thrive (Saxenian 1994).

Collaboration itself is centered around some core beliefs and values, like the notion of flat hierarchy, a sense of equity, and creating a "virtuous circle" of giving back. The focus on flat hierarchy and equity are originally attributed to Noyce, who, when leaving Fairchild wanted to empower engineers (Castilla, Hwang, Granovetter, & Granovetter 2000). There is a broad sense that ideas can come from anyone, no matter their level. Tech companies try to structure their organizations in a less hierarchical way, with an emphasis on meritocracy (Harris & Junglas 2013). As part of this, they also try to be egalitarian and spread wealth to ordinary employees (Blasi, Kruse, & Bernstein 2003). This helps propagate the "pay-it-forward" mentality. Once someone becomes successful, they give back to the community in the forms of knowledge, networking, and investment. This happens at all levels, so everyone in a sense becomes a mentor, which is satisfying and reinforcing (Blank & Dorf 2012; Harris & Junglas 2013; The Economist 2014) .

At a higher level, there are more fundamental values that underlie a lot of Silicon Valley attitudes. These include honesty and bluntness, being resourceful, and embracing weirdness and creativity. Being intellectually honest or even blunt is important in interactions— there is a belief that you become stronger and better by being pushed (Feld 2012). There is great emphasis placed on resourcefulness. Startups need to be determined and use whatever resources are available to them (Cervantes 2013). And there is also an appreciation for weirdness and creativity. A key attribute of Silicon Valley, and innovative communities in general, is that they are open to difference and eccentricity. This attracts

others with similar values and spurs events such as Burning Man, Maker Faire, etc. (Florida 2002).

The practices and processes of startups in Silicon Valley are imbued with certain values, like breaking rules and imputing confidence no matter what. In general, breaking rules is encouraged and applauded. Paul Graham of Y Combinator suggests unruliness is a necessary part of being a startup (Stross 2012). This is widely acknowledge through the Silicon Valley mantra of "ask for forgiveness, not permission" (Harris & Junglas 2013). There is also the sense that exuding confidence is important, no matter what uncertainty you are facing. Presentation and acting the part are the keys to shaping others' opinions. Presenting your product in a creative, professional manner will "impute" the desired qualities (Isaacson 2011, p. 79), which can be witnessed in the emphasis on pitching.

Specific practices and methods like Lean Startup and Customer Development are based on some core values and beliefs. Valuing experimentation is a key one. This is a primary aspect of Lean methodology, which is hypothesis-driven and rooted in the scientific method (Eisenmann, Ries, & Dillard 2012; Ries 2011) . Accepting imperfection is important. Developing an MVP (minimum viable product) means you must focus on learning and iteration, not perfection. There is a broad sense that "done is better than perfect" (Harris & Junglas 2013). Reid Hoffman, a co-founder of PayPal and noted Silicon Valley investor and influencer emphasizes this: "If you are not embarrassed by the first version of your product, you've launched too late" (Stross 2012, p. 77). Customer Development practices are also rooted in some key behavioral orientations, notably extraversion and empathy. A core part of Customer Development emphasizes "getting out of the building" and talking with potential customers (Blank & Dorf 2012). This means being

extraverted and talking to strangers. Listening to and learning from customers are integral to Customer Development, which also focuses on having a sense of empathy and understanding (Croll & Yoskovitz 2013). These are all core values and assumptions that underlie attitudes, behaviors, and interactions in Silicon Valley.

4.1.8 People

People are variously referred to as human capital, the labor market, and agents of action in various frameworks of innovation. Abstracting this at the highest level, I refer to the people— and particularly the founders— in Silicon Valley as being an important part of all of these things. Here I highlight the innate qualities that matter most.

As human capital, talent is clearly a key part of this. A large talent pool, particularly in the technical and engineering arenas, has traditionally been available in Silicon Valley. Universities and STEM education play a role in creating that pool (Moretti 2004). The talent pool has also been broadened and diversified through immigration (Saxenian 1994), which has played a key role in entrepreneurship. It is often said that a good idea can come from anywhere, but it cannot grow up just anywhere. Noted investor Peter Thiel suggests that while human ingenuity can come from anywhere, "good entrepreneurs move to where they need to be" (Thiel & Hoffman 2012).

In general in Silicon Valley people are compensated well, but there is an emphasis on and appreciation for fulfillment in other ways. People often have a balance between extrinsic and intrinsic motivation. Most IT professionals in Silicon Valley say that money is very important to them, yet nearly half would work for less money; they are extrinsically motivated, but also intrinsically fulfilled (Harris & Junglas 2013). And importantly, entrepreneurs also need to be doers, with a bias to action.

4.1.9 Practices

The practices and processes that have become key in Silicon Valley startups emerge from several different authorities. Some of the most well-known and visible include: Lean Startup processes, Customer Development, Agile Development, and pitching.

Lean Startup

Through my experience and close examination of startups and innovation, an underlying thread that connects them all is Lean Startup[5]. Lean methodologies, based primarily on Eric Ries's works on Lean Startup (2011), form the core of the practices most Silicon Valley startups— and now, enterprises— purport to follow. The work centered on Lean Startup helped spur a startup mania around the globe; it was the first model put forth to describe startup creation as a science.

The concept of Lean traces its roots back to origins in manufacturing. Lean Production, a term coined in the 1990s at MIT, was initially used to describe the Toyota Production System (TPS) (Holweg 2007). TPS is a socio-technical system that combines a distinct management philosophy and practices. According to the Toyota group that teaches the system, it is based on four core principles:

- put the customer first;
- the most valuable resources are people;
- a focus on the workplace itself; and
- kaizen, meaning "good change" in Japanese, which Toyota uses in the context of "continuous improvement" as a philosophy.

---

[5] I use the term *Lean* to refer to *Lean Startup* throughout this paper. Thus, when I reference *Lean*, I do not mean it more broadly as Lean Production or other uses of the team. The only exception to this is when I discuss the origins of the term in this section.

TPS describes itself as "a culture of problem solving at every level of the organization." TPS skills are learned by doing, not by concept. Following from Lean Production, others have borrowed the term to emphasize a focus on reducing waste and continuous refinement, although the term is often confused with meaning small teams or low monetary cost.

The term Lean Startup was coined by Ries (2011). Ries had experience with Agile Development as the Chief Technology officer of IMVU, a 3D social network. Through IMVU, he met Steve Blank, an entrepreneur and investor who created the Customer Development framework. In exchange for investment in IMVU, Blank required Ries to enroll in Blank's entrepreneurship class at UC Berkeley. Ries was heavily influenced by the course and combined his experience with Agile with Blank's methodology to create a continuous deployment concept that is heavily influenced by TPS. He primarily focused on two key concepts: Customer Development (Blank & Dorf 2012) and continuous deployment (Maurya 2012).

Lean Startup is thus intended to be a model of innovating rooted in experimentation and rapid iteration. The entire product development cycle is about building a hypothesis, testing, learning, and iterating on it. Using the Build-Measure-Learn framework (Figure 4.2), a startup theoretically can focus on reducing the time and labor involved in developing the product. In analyzing complexity, fast iteration almost always produces better results than in-depth analysis (Sessions 2006). The
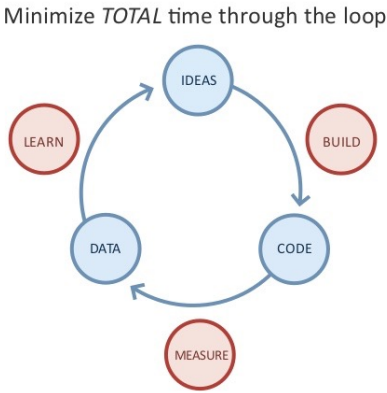
Figure 4.2: The Lean Startup Cycle

Minimum Viable Product (MVP) is the bare minimum product (or non-technology-based experiment) a team can build to use and test a number of assumptions. By testing this with early adopters, startups can continue to iterate, using Agile development practices such as Scrum or other Kanban (a signboard/scheduling system) principles to conduct short product development sprints. The form of the product may change throughout the Lean process, but the intention is that motivation and overarching vision of the team should remain intact, that is, unless experimentation disproves assumptions. In that case, they *pivot.* That means they change their focus or strategy based on these learnings. This is where Lean fits into the larger Customer Development framework.

Customer Development

Steve Blank, who started Customer Development has defined a startup "[as] an organization formed to search for a repeatable and scalable business model" (Blank & Dorf 2012). His conceptual practice, Customer Development, focuses on this goal and includes four distinct phases:

Customer Discovery, Customer Validation, Customer Creation, and Company Building (Figure 4.3). The first two phases, Discovery and Validation are in a loop, and only when customers are
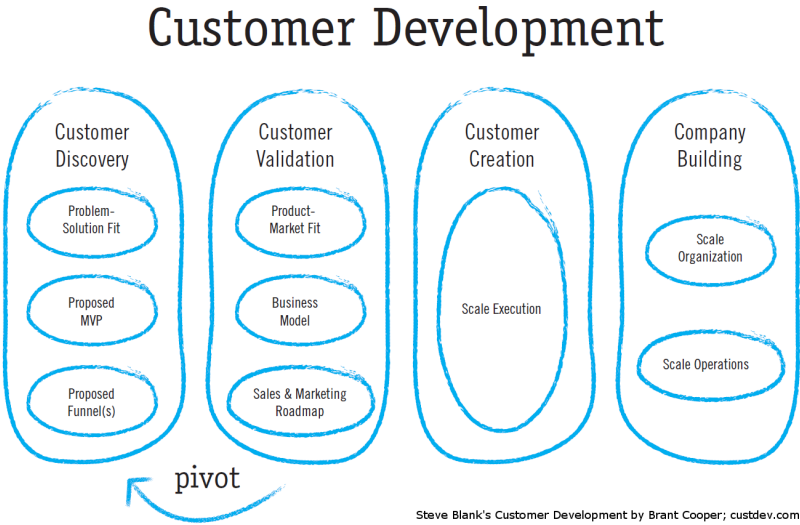
Figure 4.3: The Customer Development Process

"validated" does the loop breaks off into a linear progression of Customer Creation and Company Building. The process is half of the Lean Startup methodology and parallels the hypothesis-driven Lean Startup approach. The Build-Measure-Learn cycle is centered in the first two phases, and emphasizes validation. Validation is a significant event, although it perhaps gets less and less significant to the core value of the business as iterative cycles continue to improve peripheral aspects. A key event that Lean processes create is forcing a pivot. The team moves into an entirely new direction. Pivoting requires drawing insight from data collected (qualitative or quantitative) from experimentation and then building a new hypothesis. The methodology also popularized terms like Problem-Solution Fit and Product-Market Fit, creating common startup languages for entrepreneurs, investors, and stakeholders (Blank 2013; Cooper & Vlaskovits 2010) .

Agile

According to its practitioners, Agile software development methods stress two key concepts: the "unforgiving honesty of working code and the effectiveness of people working together with goodwill" (Highsmith & Cockburn 2001). In 2001, seventeen software developers representing a variety of development methods, like Extreme Programming, Scrum, Dynamic Systems Development Methodology, Feature-Driven Development, and pragmatic programming, met to discuss lightweight development methods. They created the Manifesto for Agile Software Development, which says:

"We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

•individuals and interactions over processes and tools,

•working software over comprehensive documentation,

•customer collaboration over contract negotiation,

•responding to change over following a plan.

That is, while there is value in the items on the right, we value the items on the

left more." (Highsmith 2001)

Promoting agility in software development goes hand in hand with the idea that

software is craftsmanship. It highlights the need for flexibility and adaptability in a

constantly changing environment, and is done by producing code in small increments,

getting feedback, rapidly iterating, and adjusting (Jacobson & Seidewitz 2014), usually in

short cycles of two to six weeks.

Pitching

Pitching is an integral activity that every entrepreneur quickly becomes familiar

with, from first-time entrepreneurs pitching in front of an audience at a StartupWeekend or

TechCrunch Disrupt, to accelerator-groomed startup teams pitching at Demo Days in front

of sophisticated investors. The format and the act of pitching are a core focus for startups

and their interlocutors: those who work with, may invest in, or potentially will use products

from startups. With the current wave of technology startups in Silicon Valley and

worldwide, pitching typically involves a brief oral presentation, often supplemented by

slides that illustrate the product and business idea.

While there is a lack of historical research on the concept of the pitch and how it has

evolved over the years, the model for startups can be loosely traced back to the format of

business plan presentations of the 1990s and early 2000s. Since then, the popularization of

Lean Startup methodology within both startups and the enterprise world has led to a

deemphasis on business plan presentation. Central to the Lean philosophy is that ideas and

the customer environment change so quickly in today's businesses that "no business plan survives first contact with a customer" (Blank & Dorf 2012).

The primary perceived role of the pitch is to garner interest and, ideally, investment in the product. Previous studies have shown that "assessing the creative potential of new ideas and their proponents is done initially and primarily on the basis of subjective assessments made during face-to-face interviews, or 'pitches'" (Elsbach & Kramer 2003). Within minutes, evaluators make their assessment of the idea and the team based on the delivery and content of the pitch. In this way, it is meant to be a tool to "discover" the top ideas; less than 5% of entrepreneurs are successful in garnering funding, even from a pool of pre-screened startups (Maxwell & Lévesque 2010).

Other studies have focused on pitches as a conduit for entrepreneurs to convey confidence (Clark 2008) and to manage impressions (Nagy, Pollack, Rutherford, & Lohrke 2012), and have examined how well-crafted pitches legitimize entrepreneurs and the business idea through both resource capital and institutional capital (Lounsbury & Glynn 2001).

4.1.10 A Complex Ecosystem

"Ecology is used to denote an emergent web of relationships among constitutive and constituting parts." (Choy 2011)

Broadly, innovation ecosystems are complex adaptive systems. The concept of ecosystem Per Snowden and Boone (2007), complex systems have a large number of interacting elements and these interactions are non-linear. The system is dynamic, constantly evolving, and the whole greater than the sum of its parts. It is not possible to

predict what will happen (Snowden & Boone 2007). As a system, it is important to note how all of these things are related, constantly evolving, and unpredictable. A change in the regulatory environment, for instance, can impact the flow of capital or the diversity of the social environment, or the influx of people into the ecosystem. Silicon Valley is an organic ecosystem that has become an "ideal type"— one that doesn't actually exist in the way people think it does— which people try to emulate. But or attempting to appropriate or control one or all of these components is not always possible and will not necessarily create the same outcome.

4.2 Accelerators and the Silicon Valley Framework

Accelerators are a particular collection of intentional practices, places, and people intended to concretize what Silicon Valley evolved naturally. I now discuss the ways in which accelerators attempt to control for or emulate these components in different contexts globally, providing descriptions and examples from my fieldwork in Singapore and Buenos Aires as well as from research on other accelerators globally. As noted, accelerators have proliferated around the world of the last five years, and while they are not all structured exactly the same, they are often very similar in many ways. While there are some standardizing bodies, like GAN, the Global Accelerator Network, most similarities in structure, function, and elements are not from any standards that have been created, but rather by appropriating what others have done.

I break these nine components down here into three groups of three for a few reasons. First, not all of these components are able to be appropriated or controlled for to the same extent. Successful accelerators are structured to "combine the best elements of

the local ecosystem and supply the missing ones externally" (Mauro 2013), but that is

necessarily limited. The first three I will cover: technology, social environment, and

regulatory environment, are intimately tied to where an accelerator is located. While there

is some ability to influence these elements, accelerators are largely impacted by where they

choose to be. The second set I will cover includes: infrastructure and the built environment,

capital, and networks. This set provides some interesting examples of the extent to which

accelerators can and do control these components. These final three, including culture,

people, and practices, have been the larger focus of my research, primarily due to the

nature of the research (ethnographic), but also due to the patterns and themes emerging

from these core components. I discuss all of these components here at the level of

granularity of the accelerator. I will focus more on the impact of the final three at the team

level in the chapters that follow.

4.2.1 Technology Access and Resources

On one hand, technological advances are what have enabled the diffusion of

accelerators and startups globally in recent years, but technology reliability, resources, and

access are not the same everywhere as they are in Silicon Valley. Where there has been

investment in this, the impact is notable. Sofia, Bulgaria, for instance, has two major

accelerators (LAUNCHhub and eleven) and a burgeoning tech startup scene in part due to

the investment in high-speed internet connections, which are among the highest in the

world. To the extent that accelerators can have an impact outside of choosing where to

locate, they do things like try to maintain locally-reliable internet connections, provide

resources they negotiate with vendors, like cheaper cloud services, and make sure their

teams have access to the tools they need.

At both JFDI and NXTP, representatives came to offer credits, or discounts, for services like Microsoft Azure and Google Cloud Services. But beyond that, technology reliability and access were difficult to control. In Singapore, access was generally easy and bandwidth was good. But it was not the same situation in Argentina. In my first Skype call with Arturo before I went to Buenos Aires, we had to turn off video due to bandwidth issues. Both the teams and the management at NXTP struggled with frequently poor internet connections, hampering development and backups and also interrupting meetings and remote participation by the teams Skyping in. Access to hardware was particularly difficult due to availability and cost. In trying to replace my stolen MacBook Pro, I found that hardware and peripherals are often three times as expensive in Argentina as in the US due to heavy import taxes. This makes it in fact cheaper to fly to the US, procure a computer, and return, than buying one in Argentina. Thus access is heavily entwined with the regulatory environment in place there.

4.2.2 Regulatory Environment

In terms of controlling for regulatory environment, accelerators again have little power aside from where they choose to establish themselves. Many researchers have focused on how to develop the appropriate regulatory environment to encourage innovation, which I will not delve into here (UP Global 2014). Rather, I will focus on how accelerators emulate the Silicon Valley ideal type within their constraints. In general, accelerators attempt to emulate the legal mechanisms in contracts that one finds in Silicon Valley. They also typically maintain similar attitudes toward intellectual property; no one requests or signs NDA's. And many provide services and support to help with temporary visa or immigration issues. Beyond that, mechanisms vary widely.

Singapore, on one hand, has a regulatory environment focused on promoting business. Teams there benefitted from relaxed regulations, government funding, and subsidies. The Block 71 area where JFDI is located is a subsidized area for startups. Some teams even noted they chose to come to Singapore due to the regulatory environment. Healint, a JFDI team, found Singapore to be a more ideal environment for focusing on their healthcare app because of less intensive regulation compared with Europe or the US.

On the other hand, Argentina is not known for having an ideal business environment. Aside from high tax rates and the constantly fluctuating exchange rate of the peso, startups struggled with other regulations. The NXTP team and mentors worked to advise the startups on issues and figure out ways around legal issues. And one of the primary ways was by guiding startups on how to incorporate in the US. In multiple sessions, startups were advised to incorporate in either the US (as an LLC in Delaware), in Uruguay, or in Costa Rica, although Panama was mentioned from time to time.
In large part, this has to do with the way capital is raised. Alejandro, one of the support staff at NXTP, noted that biggest difficulty in Argentina is that most startups need to incorporate in the US because convertible notes and other frameworks would not work in Argentina. That is, there is not the legal structure to support these types of contracts there.

Some parts of the regulatory environment affect technology more broadly. For instance, in a legal workshop at NXTP, it was noted that Facebook has had a lot of problems abroad because data privacy laws are different. Argentina's data protection law 25.326 forces data dissociation: "Treatment of personal data in such a way that the information cannot be related to any certain or ascertainable person" making it much more difficult to "sell data" like they do in the US. One of the startups that required a lot of legal guidance

was Koibanx, a bitcoin-based investment fund. During one particular drawn-out discussion of regulation, Arturo paused and sighed, then turned to me smiled, "This is going to be fun. We are going to end up in jail."

4.2.3 The Social Environment

Much like technology and regulatory environment, accelerators have limited control of the social environment in which they are situated, but to that end, they do what they can. In terms of acceptance of entrepreneurship, the Buenos Aires environment was well suited. As Argentines often note, there is always some crisis going on, which make them particularly adept at and supportive of entrepreneurialism (Amorosi 2013). In many other ways, it is somewhat similar to the Silicon Valley environment. It is known for producing countercultural movements and protests. It is a nation of immigrants and accepting of diversity. And it is also a very relaxed and social environment, where people mingle and exchange ideas, albeit over a mate (an herbal drink) rather than a coffee. To some extent, however, the relaxed environment was noted as an issue. Several teams were unsure about how to make progress with so many holidays. And there were also concerns that some of the teams that were local weren't buckling down and working hard during the program because of the environment. At a couple points, Arturo brought up the idea of moving the accelerator to Miami, which, among other things, would force teams to go abroad and work hard during the program. By the end of the program, it was announced that NXTP would actually be opening a satellite office in Silicon Valley, although this was to be for temporary stays, networking, and fundraising, not to host the program.

By way of contrast, the social environment of Singapore is quite different. Entrepreneurship is not a common path. At an event on innovation early on in my research,

there was a lengthy conversation about the lack of incentives to become an entrepreneur. People noted that it is an "exams culture"— that would-be entrepreneurs experience pressure to follow a more stable career path. The conversation soon shifted to a focus on creativity. Steve Wozniak, co-founder of Apple, had famously said that Apple could not have come out of Singapore, because "bad behavior is not tolerated" and there is a lack of creativity (Mahtani & Holmes 2011). The social environment is known for being very rule-based and not particularly similar to Silicon Valley in terms of openness or embracing a countercultural perspective. Though JFDI could not control the larger social environment, within the accelerator program, they were able to select people and influence the culture, counterbalancing this a bit.

I now move into the components that accelerators can more directly control for and emulate.

4.2.4 Infrastructure/Physical Environment

Accelerators cannot do much to impact the larger infrastructure of the area in which it is located. That will vary tremendously from place to place. But in terms of the physical environment, there are a number of things they do to emulate the density, places of exchange and serendipitous spaces of Silicon Valley. Accelerators typically situate themselves within close physical proximity to the larger startup community, or to industry and investors. JFDI and NXTP were both situated within spaces that were central to the larger startup community, but this is more difficult in more decentralized areas, like Los Angeles and Orange County. A critical issue brought up in many Orange County events is the lack of density within the startup community there, and there have been focused efforts to

Figure 4.4: The NXTP Office

locate different physical spaces like accelerators and co-working centers in closer proximity to one another.

Within their specific spaces, accelerators often attempt to create open, playful environments that are reminiscent of Silicon Valley tech companies. Both JFDI and NXTP had very open spaces that encouraged team interaction and collaboration. At JFDI, teams had specific temporary spaces, but the office was open. NXTP's setup was always in flux. JFDI's setup was more on the playful end, with different seating arrangements and furniture and, of course, Smoochie the frog. NXTP's space was open and bright orange, peppered with acrylic paintings of Silicon Valley icons done by one of the founding partners (Figure 4.4).

Both of these accelerators also had very flexible and moveable arrangements to accommodate different sorts of meetings and events with the larger community participating. JFDI established itself as a go-to space on Friday evenings, hosting their regular Open House starting at 6pm. As a standard, recurring event in the same space over the past several years, it has made JFDI a meeting place for the larger startup community, industry professionals, and investors from all over.

JFDI's physical setup went one step further in emulating Silicon Valley environments, however. While Block 71 is the tech hub area of Singapore, the residents based there often bemoan the fact that it is a bit distant from the center of Singapore and lacks good hawker centers, the food stalls Singapore is famous for, or any central space in which
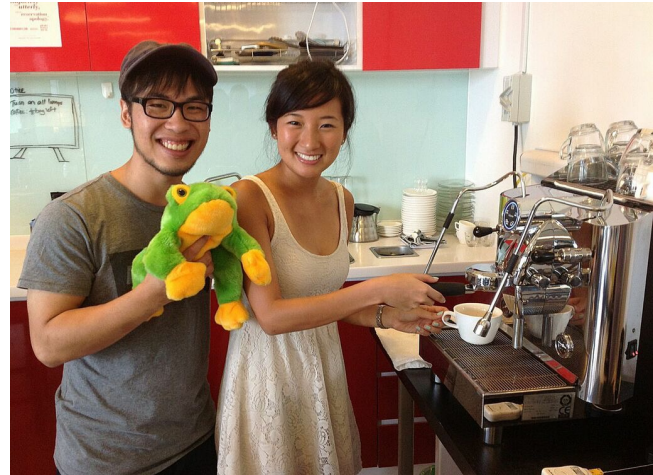
Figure 4.5: JFDI's Cafe

to congregate. Hugh and Meng had frequently experimented with various setups within the JFDI space at Block 71 to accommodate more serendipitous interaction. Just prior to the third batch of the program starting, they established a cafe. Since they lack a food and beverage permit, it's not a typical cafe. It is membership-based, not open to the public. But for a few dollars a month, founders, engineers, and investors alike drop by to have a cappuccino or a "long black" and chat with whomever is there. This is meant to increase serendipitous interaction and cross-pollination of ideas. It also provides teams with a trusted environment to invite people and build relationships. In fact some of the first generation of exited Singaporean entrepreneurs are "paying it forward" hanging out and mentoring at the JFDI cafe, like Hian Goh who founded The Food Network Asia.

4.2.5 Capital

Providing access to capital is a core focus for accelerators, and is modeled to very closely emulate Silicon Valley. By nature, accelerators are involved in capital, offering pre-seed funding to startups in return for a stake of the company. The only exception to this is

non-profit accelerators, like Stanford's StartX, which does not take equity. Both JFDI and

NXTP were structured similarly at around US $25,000 for most companies. At NXTP a

visitor once asked Gabi, the manager, why $25,000? She noted that the board came up with

this based on what was standard in the industry. From the startups side, then enables them

to extend what's called their "runway"— the time they can continue to run without other

sources of funding. For teams in Argentina, this amount proved largely sufficient for the few

months of the accelerator program. Tommy of CookApp noted his team's "burn rate" was

around US$5,000 a month, which gives them about five months to focus. In Singapore,

which is far more expensive in terms of cost of living, the initial investment did not go

nearly as far, making it a struggle for some of the teams.

Both accelerators are also primarily funded through groups of angels, making them

more similar to Silicon Valley than many others globally, which can also be corporate-, VC-,

or government-backed. In Buenos Aires, Daniel of Retargetly, a management platform for

big data, noted that there are three main accelerators his team considered: Wayra, NXTP,

and a smaller accelerator. The NXTP difference is that it is founded by angel investors, and

this makes it more valuable: "You are part of a family. You get to know them." Wayra, by

contrast is one of a franchise of accelerators run by telecommunications giant Telefonica.

The initial capital investment is only a small part of the overall financial picture,

however. The larger role the accelerator plays is in preparing teams to receive follow-on

funding. Because they are still such a new phenomenon, this is the metric by which

accelerators are often evaluated, since valuations of companies are unreliable measures.

Thus a huge role of accelerators is to create an investing network of VCs and angels for their

teams. But many of the places in which accelerators establish themselves do not have that

type of investment community. Even areas like Hong Kong, which has a lot of wealth, does not have much VC investment because it is a more risk-averse financial climate.

At one workshop at NXTP, the legal advisor leading the workshop showed a slide entitled "El venture capital en Argentina." Below it was a picture of a camel in the desert. Curating a network of potential investors is a key part of what accelerators do, and often, that links them directly with Silicon Valley. In Singapore, JFDI created strong ties with a firm called Golden Gate ventures, which expanded in Singapore because the government provided matching funds. At NXTP, pitches were ultimately conducted in English at Demo Day after much debate, because the majority of potential investors were not Spanish-speaking. Demo days, thus, are not particularly about any sort of demo, but more about setting a cadence with each graduating cohort as targets for investors to deploy capital.

4.2.6 Networks

Networks are clearly important for capital, and often involve investors directly from Silicon Valley. But many other networks are created and maintained by accelerators. Accelerators also curate a network of contacts that connects them with education, industry, and government for the purposes of mentoring, advising, and fundraising. At the broader level, they do this in a number of ways. The accelerator personnel themselves are usually nodes connecting multiple networks, and they frequently leverage individual networks both locally and to connect new geographies to the ecosystem. They also produce alumni who then also continue to do this for them. They establish themselves as destinations to visit when any major investor or other important networking connection is in town. And they consistently host networking events on a regular basis in accelerator facilities and

other ecosystem locations to continue building a community. They are simultaneously building networks for themselves, and networks for their teams.

In Silicon Valley, the development of networks is often organic or with minimal barriers, as noted earlier. The success of Y Combinator startups is often attributed to the tremendous network effects of the program. But in other locations, building such networks requires much more effort. In Singapore, the burgeoning community is being developed more broadly and recurring events made this less of an issue for JFDI, but it was still a struggle to connect teams to mentors and advisors more broadly.

At NXTP, the network development was more artificial. In the first few days of the program, there was a workshop entitled "How to get the most out of NXTP." The mentor hosting explained the TechStars' model, citing its co-founder David Cohen's words: "Find and engage great mentors." But rather focusing on building networks with a variety of mentors throughout the program, NXTP placed emphasis on finding and engaging with a mentor very early on. At the start of the program, they distributed a "mentor book" with the names, profiles and photos of mentors they were affiliated with. The second week, they hosted a big mentor "speed dating" event in which each of the teams spent 8 minutes talking with a mentor at a table, swapping in succession until they met with each of the fifteen or so mentors present. While this had some benefits in terms of enabling teams to immediately evaluate who might be important in their network, it did not help them actually build the organic relations they needed to, as many noted toward the close of the program.

Finally, I move on to the three components that were central in my research: culture, people and practices. I will briefly highlight how accelerators attempt to emulate these components, before delving deeper in Chapters 5, 6, and 7.

4.2.7 Culture

The cultural values, beliefs, and norms regularly associated with Silicon Valley (from Section 4.1.7) play a large role in shaping the organizational culture propagated within accelerators. Some of these qualities are much more explicit within accelerator programs and are imbued in pedagogy, tasks, and activities in which teams take part. Others take the form of underlying assumptions that are continually applied in the accelerator setting. Table 4.1 provides a general list of the ways in which accelerators actively promote these cultural attributes, which I will discuss in greater detail in Chapter 5.

Table 4.1: Cultural Attributes Accelerators Promote

Cultural Attributes	Ways Accelerators Promote
Accepting failure	openly celebrate failure via case studies and role models who give "Fireside Chats" and serve as mentors
Taking Risks	pre-screen participants for risk taking ideas and type-A individuals; push teams to try new ideas
Openness	imbue the philosophy ideas are worthless execution is everything; no NDAs
Collaboration	create occasions where individuals ask for help from each other at weekly check-in meetings or group sessions
Networking	promote occasions for making contacts through events and create situations and places for serendipitous interaction
Paying-it-forward	focus on helping other startups, no matter how young yours is
Flat hierarchy	all team members' ideas considered; similarly, some mentors ideas' thrown away

Table 4.1: Cultural Attributes Accelerators Promote

Cultural Attributes	Ways Accelerators Promote
Egalitarianism	put focus on achievements rather than tenure; encourage merit based relationships
Honesty	encourage teams to seek blunt feedback from mentors, investors, customers; give blunt feedback themselves
Resourcefulnees	set high goals in weekly checkins that force action (e.g. talk to 100 potential users in the next week)
Weirdness/Creativity	pre-screen for eccentricity and individualism; create an environment of playfulness
Unruliness	encouraged explicitly through "breaking things"; don't ask permission
Confidence	focus on imputing desired qualities through repeated practice of pitching
Experimentation	explicitly use Lean framework; set weekly tests, metrics, and goals with teams
Accepting Imperfection	focus energy on building just enough for the experiment; create MVP and get early feedback
Extraversion	force teams to "get out of the building" and talk to strangers
Empathy	create workshops and role play to help teams focus on customer

In general, at JFDI, there was a stronger sense of the influence of this culture, as they focused more actively on these elements. At NXTP, there was less of a focus on promoting startup culture. In part, this may be due to their changing emphasis from a more traditional Y Combinator-style accelerator to being more of a VC fund. In the following chapters I will talk more in depth about the cultures inside JFDI and NXTP.

4.2.8 People

The founders of the accelerator programs and the personnel there often have a background in startups, and frequently have some experience in and connection with

Silicon Valley, and the teams that they pick are often of a very distinctive type. Many accelerators have been known to select based on the team, rather than the idea they are trying to develop. Y Combinator has famously picked teams with terrible ideas because the team was good, and the idea can be changed. Paul Graham of Y Combinator has also famously said founders should ideally be their 20s because they can live more cheaply and are still in contact with good potential co-founders than someone in their 30s .

None of the accelerators I talked with in my research were that specific demographically, although many had very specific criteria to evaluate teams. In a workshop run by Alpha Sprouts in Orange County, they showed a spider diagram they use to select team, which evaluated the team, but also the idea, market, and assets. Within the team, their criteria included: direct experience, diversity, chiefs vs. indians, full time vs. part time, adaptability, "bHarmony." While not discussed with the same terms, these are quite similar to criteria I have seen across accelerators. Direct experience is good, but fast learning is more important than experience. In some instances, too much experience can be seen as bad because people lose openness— i.e. they are not adaptable and they cling to their idea. Those who are moonlighting or only working on a startup part time are derided as "wantrapreneurs," uncommitted. And, importantly, the preferred individuals exhibit a "bias to action," a key factor noted by Reddit co-founder and YC alum Alexis Ohanian at a UCI event. JFDI evaluates the teams that apply based on team, idea, and fit— what they call a Frog Score (Figure 4.6) which they generate from an application consisting of 90+ questions. They specifically look for teams with strong domain expertise that include what are considered "a hacker, a hipster, and a hustler." By this they mean that team members must be strong in product development, customer development, and business development
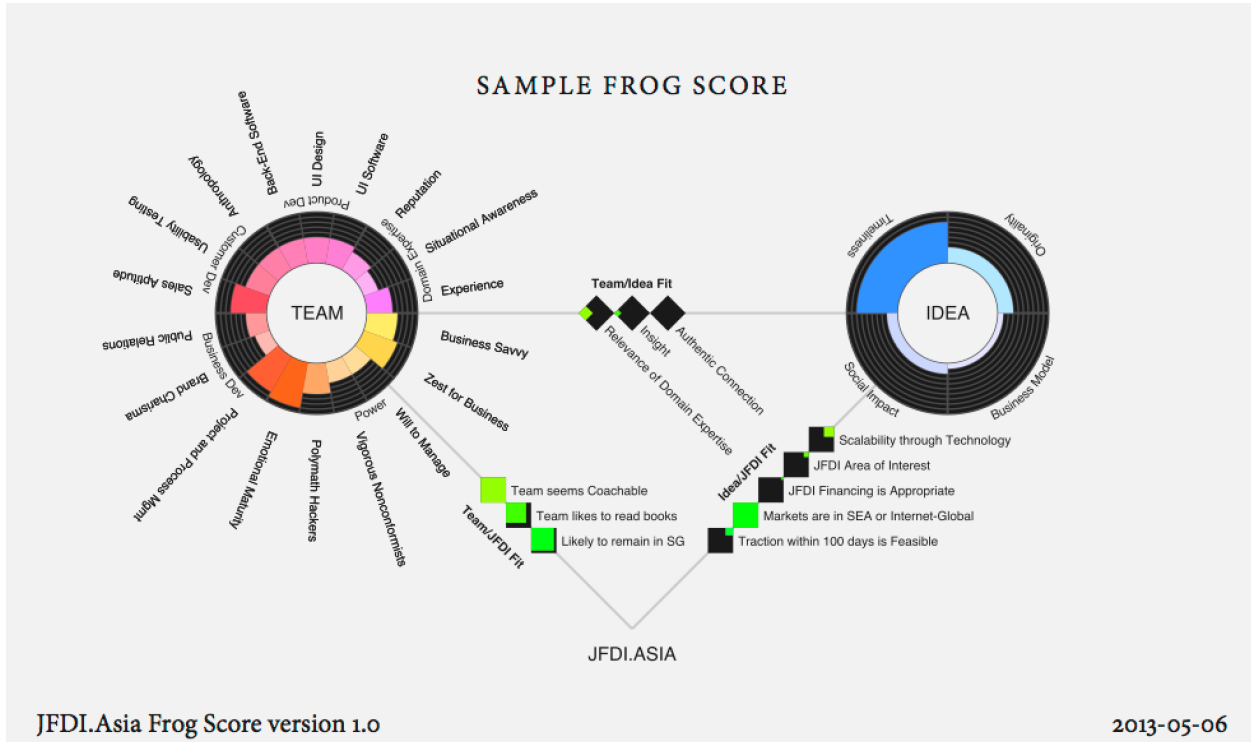
Figure 4.6: JFDI's Frog Score

and their related skills, respectively. Some of the specific criteria include: vigorous nonconformist, polymath hackers, and emotional maturity. With regard to their fit with JFDI, they sought out teams that seemed coachable, "like to read books" (i.e., learn) and were likely to remain in Singapore. Not included in the Frog Score, but also considered highly, were teams with members who had spent at least some time in the US in college or before, particularly returnees who grew up locally in their product's market and speak the language, but were educated (i.e. bilingual) abroad. Ray noted that this often illustrated that they had some tacit knowledge and understanding of how to be adaptable.

NXTP, in contrast, had a much shorter, more generic application form. However, NXTP appeared to approach team selection quite differently. According to Arturo, most of the teams they select come through referrals and their own sources, rather than directly

through the online application. Rather than selecting for criteria like "bias to action" a priori, they appeared to focus on encouraging development of such traits once there. In a mentoring workshop at the very beginning of the program, they played a video of Steve Jobs talking about "bias to action." Notably, NXTP focused on the psychological components and challenges of founding a startup. Leila, one of the staff, had a background in psychology and developed a curriculum and activities around supporting the teams emotionally.

At one point, I had the opportunity to sit in on an evaluation session to select the teams for RutaN, the Medellin, Colombia-based mini-accelerator that NXTP runs. A couple of partners, along with Arturo, Gabi, and Fran went through 85 applications over the course of a couple hours, narrowing the pool to 30 with whom to conduct interviews. While many of the teams were often described as "green," the focus of analysis was almost entirely on the idea, rather than the people. Those who made it through of course had to do an interview round, but it was clear that at least for RutaN, NXTP's selection process focused less on finding a specific type of person. Weeks later, after returning from Colombia to attend the start of the program, Arturo noted they had better teams this edition, which he attributed to NXTP becoming more well known and thus attracting better teams.

4.2.9 Practices

Finally, the everyday practices within accelerators are key in the role they play for startups globally. The core curricula of Lean and Customer Development helped to fuel the propagation of accelerators globally, providing a guide to support the development of technology startups on a larger scale. Accelerators in general choose a curriculum and set up technical courses to mimic the trajectory of a Lean Startup in early stage; i.e.. customer interview techniques, "funnel metrics" (numbers to figure out where your market is),

79

search engine marketing. They create workshops and training sessions around key domains

for a startup: product development, business development, marketing, finance, and law.

And they guide startups in the art of pitching. Most of these, as taught, very nearly follow

the models of these practices that emerged from Silicon Valley. But the extent to which they

focus on particular practices varies widely, which I will examine in the coming chapters.

JFDI followed most of these practices very closely, using Lean and Customer

Development structure and processes to drive the way they worked with and managed the

teams. Additionally the weekly calendar was filled with "Frog School" activities: startup

clinics, fireside mentor chats, training sessions, and pitch practices. NXTP front-loaded the

majority of their workshops and activities in the initial few weeks of the program. While

some of these covered Lean and training in other key domains, these were not as widely

spread in the daily practices and goings-on in the NXTP office. In Chapters 6 and 7, I look

more closely at practices, particularly Lean and pitching.

4.3 Isomorphism and Identity

4.3.1 An Institutional Approach in Innovation

In the first part of this chapter, I outlined what are considered key components of

Silicon Valley as an innovation ecosystem. In the second, I illustrated how accelerators use

Silicon Valley as a framework and attempt to reproduce or control for these components,

noting examples among my fieldsites. Now I present an *institutional* approach to

understanding these descriptive phenomena.

Institutional theory, or neoinstitutionalism, a la DiMaggio and Powell (1983)

emerged in contrast to rationalist theories of organizations. It champions cognitive and

cultural explanations, as Orlikowski and Barley note: "Institutional analysis examines how broad social and historical forces, ranging from explicit laws to implicit cultural understandings, affect and are affected by the actions of organizations" (Orlikowski & Barley 2001, p. 153). Within the realm of technology innovation, institutions and institutional factors play an essential role. Institutions are a powerful source in intervening in, enabling, and constraining innovation (King et al. 1994).

Some of the key concepts underlying the institutional approach emerged from DiMaggio and Powell's research on what makes organizations so similar. In *Notes from The Iron Cage Revisited*, they strike out against Weber's "iron cage" notions of rationalism and efficiency. Building on other work (Meyer & Rowan 1977), they illustrate that organizations don't necessarily become more efficient as they become more similar. Thus organizations are not becoming more homogeneous purely for economic gain. Rather, they are also trying to gain legitimacy and power. They present this core concept as *institutional isomorphism*, which is essentially a move toward similarity in pursuit of legitimacy. They become more similar to appear legitimate, which underlies the emulation of Silicon Valley.

4.3.2 Institutional Isomorphism and Accelerators

In its most basic sense, isomorphism can be described like herd behavior (Nicholas 2011). That is to say that in contrast to making rational choices, decision makers disregard their own information and accept another's as being more valid. This is similar in many ways to the bandwagon effect, but the forces behind the change may vary. DiMaggio and Powell introduce three types of isomorphism: mimetic, coercive, and normative. Mimetic isomorphism occurs in high uncertainty conditions. Organizations don't know what to do, so they appropriate the practices and elements of successful ones. Coercive isomorphism

occurs through institutions setting standards or dictating requirements, which creates

pressures on dependent organizations. And finally there is normative isomorphism, which

refers to implicit or explicit standard set by professionalization or by people within the

organization. All three of these mechanisms drive similarity in the pursuit of legitimacy and

power. In the case of accelerators, we can see instances of all three, although mimesis

appears to have the strongest effect.

In the tech world and particularly in today's recent startup explosion, the

determinants of success are unknown. Silicon Valley emerged organically to be a dominant

technology ecosystem, so it is looked at as a model for how to do things. But there are a

number of highly complex interacting components that make it what it is, so it is impossible

to create an accurate causal model. In large part, accelerators have attempted to imitate key

components of this in other settings because there is so much uncertainty about how to

build an ecosystem. Accelerators as a form emerged with Y Combinator, which evolved

within Silicon Valley as part of the ecosystem. "YC and the founders it backs sit in the center

of the Valley's innovation ecosystem. That ecosystem was the best place to observe startups

working, out of public sight…" (Stross 2012, p. 6) Others see the huge success of an

accelerator like Y Combinator and they use it as a model. But even Y Combinator cannot

explain the success of Y Combinator— it has evolved and adapted itself over the years.

As accelerators have emerged in other places, they take similar forms through

mimesis of both Silicon Valley as a model on the field level (innovation ecosystems broadly)

and other accelerators on the organizational level. This occurs directly through

appropriating certain structures, practices, and forms. But it is also driven by the networks

of people engaged in the global startup scene who move between organizations. This

happens by way of the accelerator co-founders and personnel who often have been involved either in other accelerators, or in the Silicon Valley ecosystem directly, such as Meng from JFDI.

To a large extent, there is also coercive isomorphism. Accelerators are heavily connected to and dependent upon other sources, particularly for investment. They must appeal to various investment partners, especially venture capital firms. This creates pressure to appear legitimate, which in turn, means being similar to other accelerators that are successful. Accelerators attempt to structure and present themselves in ways that mimic others, but it is expectations, rather than uncertainty, driving it. Demo day, for instance, is often considered a waste of time and energy by accelerators in terms of its benefit to teams. Many noted that most investment deals do not come from demo days, and that the huge focus on the event hampers teams' productivity. But demo day happens anyway, and to much fanfare, because it is expected by investors.

Finally, normative isomorphism plays a role as well. Normative pressures are brought about by professions. Startups do not in themselves constitute a profession, and there is no particular education background that influences them widely. But there are modes of legitimization within the larger startup community. This is most evident in the rise of particular practices emerging out of Silicon Valley like Lean Startup and Customer Development. Walk into any accelerator and there will almost always be a copy of Ries's *Lean Startup* lying somewhere. Socializing and inter-organizational networks contribute to the spread of these practices. The interconnection of mentors among various accelerators and ecosystems plays a large role in these normative pressures, impacting accelerators broadly.

DiMaggio and Powell close with some hypotheses on predictors of isomorphism, both at the organizational and field levels. At the field-level, several of their predictors are relevant to the case of accelerators emulating Silicon Valley. Hypothesis B-1 suggests that the greater the extent the field is dependent upon a single source, the higher level of isomorphism. In this case, the primary source is the ecosystem of Silicon Valley, which is then emulated in accelerators broadly. There is some competition, which drives differentiation to some extent. But by and large, the shape of accelerators has emerged from a singular source. B-3 hypothesizes that the fewer the number of organizational models, the quicker the isomorphism. The rapid spread of accelerators can be attributed to the straightforward model generated by Y Combinator. Finally, Hypothesis B-4 puts forth the notion that the more technological uncertainty or goal ambiguity, the greater the rate of isomorphism. As we have seen, there is a great deal of uncertainty about technologies, about goals, and about what success really means.

4.3.3 Accelerator Identity

Taking an institutional approach, we can see that these mechanisms of isomorphism drive accelerators globally to adopt forms and routines that emulate those in Silicon Valley to legitimize them in the global startup community. Globally, they are all similar in many ways. But it is clear that accelerators also have distinctive identities in different places. How do we account for the differences in the global and local?

Strandgaard Pedersen and Dobbin (2006) suggest looking at both the *institutional* perspective, but also at *organizational culture* perspective. They combine the idea of identity formation and uniqueness with the process of legitimation through uniformity: the "duality of institutionalized meaning and identity as it has come to constitute the

organization" {Pedersen 2006, p. 901). They discuss the types of social transformation

process by which these dual processes (identity formation and isomorphism) are bridged;

they suggest four different types of mechanisms that "mediate the relationship between

global and local models of organizing: imitation, hybridization, transmutation, and

immunization" (p. 903):

- imitation: copied practices

- hybridization: local organizational elements combined with field-level elements,
  which resembles bricolage

- transmutation: existing forms and practices provided with new meaning and
  content

- immunization: the opposite of imitation; rejecting new models and stick to
  existing conventions

While there are certainly imitated practices, other mechanisms are also in play. The

accelerator examples illustrated some of the difference in implementation of the

components. Sometimes, these differences emerged from difficulties and challenges to

appropriating the model in different contexts globally. Mauro notes: "[T]o replicate the

success of accelerator programs such as Y Combinator, the major challenge is the absence

or immaturity of some components of the surrounding ecosystem" (Mauro 2013). These

challenges are necessarily different in different places, creating a hybridization of the model

as accelerators balance following the model with the environment; but there is also

transmutation of some practices, and rejection too, depending on the accelerator.

Both NXTP and JFDI are at once trying to show legitimacy at a global level, but also

have an identity that ties them to their local level, as evidenced in their taglines ("LatAm's

Accelerator" and "Creating products in Asia, for Asia"). As accelerators have evolved over the last few years, many have also started differentiating themselves in ways other than geographic location. Some of this is by product type. For instance, there are accelerators that focus purely on mobile products, like Momentum or Tandem. Some have differentiated in terms of focus. NeuroLaunch, for example, focuses on brain-based technologies, while GENerator focuses on technologies for older adults. And others now focus on certain demographics, like NewMe for minorities and women. Still, all of these follow the format to large degree. The goal is not so much an attempt at efficiently competing in the same field as it is to gain legitimacy more broadly. The startup community is global, so legitimacy is important, but so is identity.

I now shift my focus broadly from the accelerator level to the team level in the chapters that follow, focusing primarily on issues centering on the culture, people, and practices within the accelerators. In Chapter 5, I will look more closely at the cultural aspects of accelerators, and the complexities that arise in different contexts globally. In Chapter 6, I present a more symbolic perspective, highlighting the ritual transformation of the teams. And in Chapter 7, I take a practice perspective, looking more deeply at the practical actions that shape the teams and the products they create.

CHAPTER 5. SILICON VALLEY STARTUP CULTURE IN DIFFERENT

CONTEXTS

As we examined in the previous chapter, institutional forces have played a role in replicating a relatively similar culture throughout accelerators broadly. In this chapter, I move from looking at the accelerator level to the team level, focusing on the startup culture propagated within accelerators and the complexities and tensions that arise in different contexts globally.

5.1 Accelerators as Transnational Spaces

Global accelerators are sites of complex cultural production and tension. The complexities are manifold. First, participating teams come from a variety of different backgrounds. They come from far and wide and many of the teams are cross-cultural themselves. Second, they often focus on developing their product for a specific national or regional market. Third, they are building and growing their startup at an accelerator in a specific location and context, like Singapore or Buenos Aires. And, finally, they are participating in an accelerator program, a model that emerged in the US and is primarily rooted in the values of Silicon Valley, so the lessons, processes, and goals are heavily influenced, both explicitly and implicitly, by the culture of the Valley. This is not even to mention the other influences of mentors and investors from around the globe. So, for instance, you may have a Taiwanese entrepreneur, working with a Canadian cofounder, focusing on an Indonesian market in developing their startup at an accelerator in Singapore — one which is operating under a model with processes and ideals that very much derive from Silicon Valley. Thus, accelerators are highly complex transnational spaces. In this

chapter, I investigate the cultural attributes accelerators propagate from Silicon Valley and how they are transformed and implemented in these complex contexts. I draw focus on the complexities this presents for founders of different backgrounds and highlight implications related to the importance of these cultural attributes.

5.2 Implicit Cultural Reproduction and its Complexities

In accelerators, certain qualities and characteristics are implicitly imbued, to varying results. Startup culture that represents Silicon Valley ideals and attitudes is sometimes at odds with the cultural backgrounds of founders or the context of the place or user market. This creates complex issues for each team, but also reveals a rich set of experiences to draw a better understanding of these cultural practices, their importance, applicability, and adaptability. Here I examine some of the cultural attributes originally presented in Section 4.1.7.

5.2.1 Accepting Failure and Taking Risks

The capacity to embrace and learn from failing is considered essential in Silicon Valley. It gives one experience to carry forward in other ventures, and goes hand-in-hand with risk: seeing someone fail and learn from it encourages entrepreneurs to take more risks; and taking more risks also leads to more failures to learn from. In accelerators, the importance of these qualities is implied in the focus on rapid iteration and pivoting, and the goal of making products that are disruptive and going against the grain. There were many complexities related to these entwined values- some related to the contexts of Singapore and Argentina, others to the organizational cultures from which founders came, but also to

founders' home cultures, which were often cited as being more focused on stability and specific ideas of success.

At JFDI, many of the founders came from cultural backgrounds where children live with their parents until much later in life than in the US and familial and community perceptions and acceptance are very important. These founders often grew up in an "exams" culture, where good scores are valued over exploration and careers paths are chosen based on stability and an appreciation for "traditional success," rather than the self-defined success of entrepreneurship. Qwikwire, talked about their challenges with this, compared to the Silicon Valley ideal. Bing, a Filipino, said: "It's actually quite alien to a lot of Asians, because we're taught to follow." Scott, his teammate from Taiwan, chimed in (in a high-pitched voice, mimicking an older woman's): "Why you no doctor?" Scott had quit his job as a senior auditor at Deloitte to work on Qwikwire with his teammates, much to his family's dismay. Bing continued: "Everyone's expected to follow a path, right? And so whatever it is we're doing right now is actually quite against the culture....People are not encouraged to experiment. They're expected to follow a certain norm."

Breaking the norm, while a huge risk in itself, also meant founders had less of an appetite for other risk-taking. Several Korean founders taking part in a program called K-Celerate discussed similar challenges— those of "wantrapreneurs," entrepreneurs who moonlight without leaving their full-time job. In Korea, Chaebols (giant family-owned conglomerates) dominate the economy; ten Chaebols account for 80% of national GDP. So, if you are software engineer and you are not working for a major corporation, there is a great deal of social pressure and shame; identifying yourself as an entrepreneur diminishes status. They noted that this also leads to a lot of safe "me too" products to try to make a

secure entry into the startup world rather than doing something very disruptive.

Interestingly, in Argentina, attitudes to entrepreneurship are at the opposite end of the

spectrum, as Argentines suggest they are always in "crisis mode," but this also creates

aversion to risk. Tommy of CookApp noted that the Buenos Aires ecosystem was "still a

bunch of copycats." But he added: "I don't mind copycats. It's a very smart way to

implement," but suggested teams needed to take more risks by working on something more

global.

Other challenges arose from being from more staid organization cultures. Mun Yew,

cofounder of TapTalents, came from a government job, where risk-taking is not encouraged.

He and his co-founder had specifically joined the program to get out of their own comfort

zone and "have someone kick us in the back and push us to the limit."

Relatedly, investors in Singapore are seen as more risk averse, and government

funding is common, raising the question of whether the government wants to fund people

who fail? With all of these elements at play, it is no surprise there is often a hesitance

accepting failure when you have taken a risk. At JFDI, this mainly emerged in teams'

hesitation to pivot. Most teams whose ideas were failing either pivoted very late (week 10

of 14 or later), or not at all, despite indications that they did not achieve product-market fit.

At NXTP, there were issues with the extent to which failure was acceptable, however.

In a pitch practice session a few weeks before demo day, Daniel of Retargetly gave a strong

pitch for his team, but on the last slide, included the following Winston Churchill quote:

"Success is not final, failure is not fatal: it is the courage to continue that counts." Arturo

immediately questioned whether he should say this to investors; they don't seek out failure.

At NXTP, failing was acceptable, but almost too acceptable to some. "Failing is overrated

here. Nobody wants to fail," said Javier of Real Trends. "Small failures, ok. But here, failure is celebrated." He indicated that encouraging the acceptance of failure is not necessarily a good thing.

5.2.2 Openness and Networking

Silicon Valley is known for its open culture, information sharing, and informal learning happening interorganizationally, which accelerators try to emulate within their ecosystems. At JFDI, the teams worked in a collocated office with a cafe, an environment intended to promote networking and cross-pollination of ideas. Similarly JFDI's regular Friday Open House and NXTP's events were meant to encourage broad-based networking and serendipity. However, this did not come naturally for everyone. TapTalents, for example, often skipped the Open House events, despite a manager explaining that it was meant to be a chance to meet people. In retrospect they cited the push to be more extraverted as a good thing, and that they ultimately asked for introductions, couching it as "we are nobodies yet, but we think we have something." They needed specific instruction to reach this conclusion. Others, such as Ruey, a Taiwanese cofounder of Obatech, suggested similar themes related to hierarchy. She said that sometimes she felt intimidated to speak up to the successful people giving her advice. She suggested it was good practice for her to network with stakeholders and give her perspective immediately, rather than remaining quiet to listen to them.

At NXTP, networking became an issue for several teams who constantly asked for advice on how to contact mentors. This is one of the reasons they originally created the mentor speed-dating event and why Arturo was constantly urging teams to follow up. Rather than openly networking to find contacts, teams expected someone else to build their

network. Daniel of WinAd said he had gone through the entire mentor book, contacting

people, but things just were not working. He ultimately left and returned to Colombia. And

even when teams are give a "warm introduction" to mentors, they often struggle. Arthur, of

MOLOME from Thailand, struggled with drafting emails to people he had been introduced

to to ask for a meeting.

The casualness and role of alcohol at the events was new for some. Those coming

from certain corporate backgrounds noted the difficulty in realizing it was a different type

of networking altogether. Ching, of Vault Dragon, was used to having an agenda. It took a

while for him to realize this type of networking was focused on relationship-building. "Most

people just want to help out," he said, which is yet another significant cultural feature,

collaboration.

5.2.3 Paying it Forward

"Pay it forward" is the cultural notion that helping others and giving back to the

community is a primary goal. In accelerators, as in Silicon Valley, mentoring plays a huge

role, as do peer feedback and open collaboration. But this is not the norm in many places or

cultures, ranging from other parts of California to Buenos Aires to China and Singapore.

While Silicon Valley is known for its collegiality, Southern California has a more

transactional culture, as noted by those running accelerator programs there (Rannala

2014). People expect something in return if they do you a favor. In Buenos Aires, it was

much the same. At one point Gabi, the teams' coach, came to me and asked if it was normal

in other places to pay mentors. The idea of paying for mentorship is actually considered

anathema in Silicon Valley and many other places. I told her it was not particularly normal.

She pointed out that another accelerator, whom they considered themselves in competition

with, actually did pay mentors, so they were considering it. At another session later on, she said: "In Argentina, it's not like the cultural tradition in the US where successful entrepreneurs go and help the next generation. There's not this culture yet, because we're only in the first generation of startups." She referenced Mercado Libre as being one of the first successful Argentine startups and beginning to build this collaborative ecosystem.

In China, competition is more the norm. Ray, the JFDI manager, noted trust issues in working with Chinese teams. At a workshop in Beijing (conducted in Chinese, with 99% local Chinese attendees), he noted: "attendees were obsessed with how Lean Startup prevents competition. They did not want to share details of their ideas because they are afraid to be copied." These both have to do with the context of the place. Southern California is influenced by the "transactional" nature of other industries, like Hollywood. People expect something in return for helping out. In China, organizations tend to be more closed-off and opaque. In Singapore, panelists at an innovation event suggested that the incentives might be a bit different there— more extrinsic than intrinsic.

At JFDI, there was some concern that some mentors became involved for other, less altruistic reasons than helping teams, such as self promotion or getting their name out. But the majority of mentors just wanted to give back, which imbued the accelerator with a sense of reciprocity. Remi of Obatech even noted that this is why her team chose to come to JFDI. Another accelerator in Taiwan had offered them a place, but wanted equity in exchange for mentorship, with no investment. She said, "We kind of view that as a consistent problem in the Taiwanese ecosystem, where people are unwilling to share mentorship with young startups, without taking a cut. That's one of the things we liked about JFDI." Teams themselves noted their efforts at trying to help each other out, but were

93

unsure of how much of an impact they had. Louis of Skimbl noted, "In the growth stage, it's hard. You don't know how much you can really help the others."

5.2.4 Flat Hierarchy

In Silicon Valley, it is thought that good ideas can come from anywhere. Likewise, in accelerators, mentors, investors and others are intended to be partners, not authorities, and teams are meant to be flat and co-founders equals. But there are often difficulties in the nuances of working with others when the perception of hierarchy (and status within) is different. In mentor talks at JFDI, many teams did not ask questions, suggesting a perception of the mentor as an authority figure. Hugh, JFDI's cofounder, has often said that founders from certain cultural backgrounds, such as Thailand, look to him as a father figure. For the teams, this creates a lot of complications in decision making. MOLOME, a Thai team, struggled in trying to take the advice of too many different mentors. At first, they were not sure which feedback to follow; it took a while to determine which advice was best for them. In reflection, Arthur, MOLOME's CEO said: "We got a lot of advice, from a lot of people. It's kind of, like, confusing in the beginning. I slowly learned to be able to tell better what is a strong point for each advisor and pick the one that is most useful for us." On the flip side, other teams craved more authoritative mentors. Francois of Healint was disappointed that the mentors were mostly in their 30s or 40s, suggesting "I would have liked some with a bit more grey hair."

5.2.5 Being Honest and Blunt

Giving brutally honest feedback is appreciated in Silicon Valley, and accelerators try to implement this in weekly checkins and encourage peer critique in pitches. But culturally

there are many difficulties to breaking a politeness barrier. At both sites, teams generally

hesitated to critique one another at pitch session or to generally disagree with others. In

suggesting advice for other startups, Remi of Obatech warned against this: "A lot of

Taiwanese founder have no opinions. And Indonesian startups would be like "yeah yeah

yeah" [on feedback] and then continue what they're doing. I would warn them to be flexible

and if they disagree with something, they should be open about it." Even in exit interviews

many teams hesitated to give blunt feedback about the program. This was also an issue in

the opposite direction— receiving honest feedback. Following NXTP's mentor speed-dating

event, several teams complained about some of the feedback they received from the

mentors, saying that one of the mentors who was very blunt was too short with them and

very discourteous.

5.2.6 Acceptance of Weirdness and Creativity

Finally, in the tradition of Burning Man, Maker Faire and other events, the

countercultural attitude of Silicon Valley promotes a certain sort of creativity or acceptance

of weirdness. Accelerators promote "disruption," but there is less discussion of creativity

specifically. At a panel hosted by Google in Singapore, much discussion centered around

how Singapore is very rule-based, which "limits creativity"; people ask for permission first

rather than following the mantra "ask for forgiveness, not permission." Others suggested

that the educational system is a limiting factor, with the influence of the instructor being

too powerful and limiting curiosity.

5.3 Culture and Complexity in Practices

Many co-founders' ideas are drawn from their experiences of something in their personal lives. Thus, many have a great understanding the context or problem space. But in terms of developing that idea or their product further, they are unequipped and untrained in the methods of creating a startup. Lean methodologies and principles and other training provided by accelerators are meant to address this. Many teams had not heard of things like "product-market fit, MVP, and all that silly stuff" as Arthur, from MOLOME, said. But they wanted to try them because, as they said, they knew it was "like what people do in Silicon Valley." Others, such as Skimbl, a French team doing content analysis for foreign businesses in China, had heard of these, but specifically wanted to try them in a new cultural context. Louis, CEO of the team said: "We thought JFDI would be a good fit. They're really focused on Lean methodologies. It would be a bridge from west to east." In teaching Lean principles, accelerators are trying to be explicit about what should be done, but there are also implied cultural nuances and tacit knowledge that underlie these practices. These can create barriers or difficulties for startups and also help to expose certain biases of the model.

5.3.1 Experimentation

At the heart of Lean is a focus on experimentation. The entire product development cycle is about building a hypothesis, testing, learning, and iterating on it. Teams definitively agreed that this was one of the most important aspects of participating in an accelerator because it forces you to take action, to go out and learn and refine your product. This ethos of exploration is not a natural fit for everyone, however. TapTalents, a Singaporean team working on enterprise training software, said this was a bit difficult for them at first.

Cofounder Rendy said: "Key is be open-minded, right? I mean, coming from an Asian background, a lot of things are not so systematic. Even in corporate, even in government- they follow guidelines, but they're not so focused on that." Similarly, Ching of Vault Dragon said keeping an open mind was important, because you get proven wrong in experiments, so "you might be blindsided by certain things, assumptions, because of your background or experience."

At NXTP, while there were some workshops and education around Lean, there was a lack of follow-through on the process or experimenting. Over several weeks of checkins, Gabi and Arturo had encouraged MeroArte to test some different ideas out, but the business model never changed. In asking him whether they experimented with other ideas, Nico said: "Not much. With Santi (his co-founder), we have a different vision about Lean. He didn't like Lean."

5.3.2 Extraversion

Founders in Silicon Valley are expected to be resourceful, make connections, and find potential partners or customers. Customer development requires you to "get out of the building" (Blank & Dorf 2012) and find out what people want, and this requires a certain level of comfort in to talking to strangers. This is an explicit part of the process in accelerators, and can create tension for those who come from cultural backgrounds with different etiquette. Arthur, the CEO of MOLOME, expressed discomfort in trying to talk with customers, especially in English. He had the same list of contacts to call for about six weeks, and he ultimately resorted to emailing them for feedback, rather than talking, in part because of the language barrier. But he still felt "a bit weird and awkward" to email strangers.

Likewise, CloudJay, a Vietnamese team working on a logistics mobile application, was uncomfortable contacting potential customers outright. CloudJay did not want to cold call customers for feedback, suggesting "that's not how we do things in Vietnam. We would go to dinner and drinks." The team eventually dropped out of the JFDI program halfway through in part because they felt uncomfortable breaking these sort of norms. Despite spending months trying to engage strangers, neither team felt more comfortable after much practice.

5.3.3 Accepting imperfection

In developing an MVP, iterating and learning are key. This means you must develop a minimum feature set early, which will be unrefined, even ugly. But you must release it to get feedback. This is an explicit part of Lean, and is meant to emphasize continuous learning and improvement and minimize wasted time. But it also creates some complications for those with more sensitive cultural attitudes about outward perception. In some cultures, it is not desirable, or acceptable even, to let others see something you consider unfinished or inferior. In a series of weekly check-in meetings, TapTalents wanted to refine the product more, rather than shipping it. Similarly, CloudJay, from Vietnam, and Healint, an international team from France, Germany, and Malaysia, continued to code and develop their product without getting customer feedback. This hesitation led both teams to delay product decisions and iterations.

5.3.4 Imputing

"Imputing" is the idea that presentation and acting are the key to shaping others' opinions. While "acting the part" implies many other things that have to do with a variety of

cultural qualities, presentation in the form of pitching is one of the most significant parts. Accelerators focus a great deal of energy on training founders to pitch to investors (the goal of Demo Day). Pitching is about language skills, but also the idea of telling a story. It is about being able to give people a persuasive overview of your startup, its traction, and its vision for the future. So, co-founders often find themselves in a position of constantly performing, mostly for investors, where the goal is to get people to fall in love with the interpretation of the idea, not necessarily the actual product. Several found difficulties in exuding confidence while actually feeling unsure of the product and its direction and lamented the focus on presentation. These tended to be founders who had difficulties with English language presentation.

Those who presented well in English, on the other hand, found the focus on pitching helpful, even suggesting that it helped drive their product direction. Vault Dragon said it was a "self-fulfilling prophecy," wherein others believed in them, which actually made them believe in themselves more and changed their vision of the company. The implication of this is seemingly that if you are already good at presenting in English and you can act the part, then others will believe in you more. This raises concerns for those who have difficulties.

5.3.5 Empathy

Validated learning from customers is core to customer development and Lean. But not everyone knows how to interact with customers, do interviews, and advocate for their view. Empathy is an important part of this. Some teams, such as enMarkit, an Indian ecommerce team, had a different approach based on their backgrounds and market. They came on aggressively, which may have been a way to stand out and get customers. But this had the unintended consequence of drowning out customer feedback in the beginning.

99

Rather than listening to customer concerns and comments, they would take the offensive, trying to convince the customer of the product. They eventually hit a wall and started listening more closely, pivoting the product to be a better fit. Interestingly, some teams see empathy as opposed to creating the best product. Skimbl said empathy was their "only reason of existing" and suggested "don't try to do the best product; listen to your client," which raises some questions about what the "best" product is and the role of empathy in designing a product.

5.4 Creating Cultural Capital

At face value, innovation practices like developing an MVP or talking with mentors do not necessarily seem to be imbued with specific cultural values. But through looking at these practices in context and unpacking the complexities that arise for founders, we can see that global accelerators are sites of complex cultural interaction, reproduction, and tension. The highly transnational nature of global accelerator programs provides a rich set of examples of all of these issues. Bing, of Qwikwire, said the mix of cultures was the most interesting part of the accelerator because all of the teams "came from different backgrounds, different histories... [I]t was something everyone could learn from... The differences run pretty deep. They created quite different experiences." On one hand, this cultural reproduction creates discontinuities for founders from different backgrounds, but on the other, it enables them to garner more acceptance, recognition, and power in the startup community. Taking Swidler's (1986) notion of culture as a toolkit, we can see these elements as both constraining and enabling. From this viewpoint, culture is not something people are passively affected by; cultural elements also inform behavior and decision

making and they can be used as tools to inform or justify actions. And in a global startup environment, a cultural toolkit can help a startup survive, as I will describe in more detail in the following sections.

5.4.1 Accelerators as Arbiters of Capital

To analyze the influence of these cultural attributes and their implications in global accelerators, I loosely draw on Bourdieu's (1986) notions of capital and cultural discontinuities. If we look at accelerators as Bourdieu looked at education, as institutions that reproduce the social order, we can begin to unpack their influence through the forms of capital that they provide. Bourdieu initially delineated three types of capital: economic, social, and cultural. The common conceptualization of capital is usually that of the narrowly defined realm of economic capital, or financial exchange. Bourdieu expanded this concept of capital to include social and cultural capital and their relationship to economic capital. Social capital he described as "a durable network of more or less institutionalized relationships of mutual acquaintance and recognition." Cultural capital, on the other hand, is formed through symbolic elements, such as skills, tastes, or credentials, which are acquired and identify you as being part of a collective.

All forms of capital represent an investment and each is interconnected to the others. Economic capital can be converted into cultural capital, cultural capital to social capital, and social capital back to economic capital. So for instance, being a startup with cultural capital means you are acknowledged as part of the broader global startup community. This in turn helps a startup expand their network—their social capital. And those connections turn out to be valuable for getting financial support to continue your startup. Importantly, all of these forms of capital have an important impact in terms of their

ability to constitute advantage or disadvantage in society. For Bourdieu, the concept of cultural capital illustrated how social inequalities could be perpetuated in the academic world. The academic success or failure of a student is not necessarily attributable to their intelligence or talent. It also is determined in part by the type and amount of cultural capital provided by their family.

We can view accelerators as institutions that reproduce a certain social order. They provide economic capital to teams, they help them develop social capital by building networks, and they enable cultural capital by instilling certain beliefs, values, and ways of behaving. As Remi of Obatech said, the role of an accelerators is "to teach [us] to think and be like an entrepreneur." Part of the role of accelerators is to teach them to act the part. It is the enactment of what it is to be a startup in the global startup world.

5.4.2 Forms of Cultural Capital

The concept of cultural capital can be broken down into three distinct forms: embodied, objectified, and institutionalized. The embodied form is centered in the mind and body, such as mannerisms or a way of speaking. In its objectified state, cultural capital exists in tangible, material items which signal a collective identity. And in an institutionalized form, it is manifest in symbols such as qualifications or credentials, which often represent authority or competence. Using this framework highlights some of the implications of the cultural reproduction of Silicon Valley ideals through accelerators.

Embodied Cultural Capital

Embodied cultural capital is the internalization of certain "dispositions of the mind and body" (1986). This includes the internalizations of beliefs and values that are then

exhibited in behaviors, language use, and self-presentation. Through their participation in the accelerator, and particularly through training involving pitching and a focus on presentation, founders at JFDI all learned a way of being in the world that is different from what they knew before. The implication is that this instills a sort of presence and way of being that makes them more accepted and integrated into the startup community. Indeed, many talked of their experiences this way. Ching of Vault Dragon said, "Just by the fact we're in JFDI, we have the confidence to go out there and take on the world." For him, participation in the accelerator instilled a certain "way of being" and by presenting himself in that way can be seen as enabling and powerful. This was particularly ingrained through the practice of pitching, wherein teams had to speak, gesture, and dress the part— using slick presentation decks and wearing t-shirts depicting their startups logos.

Objectified Cultural Capital

While Bourdieu described objectified cultural capital in terms of consumption, I draw on this notion to focus on production. We can look at the durable artifacts produced as embodying certain cultural attributes. In the case of accelerators, this is manifest in the products being created. Through Lean principles and other accelerator practices like Customer Development and creating an MVP, certain cultural qualities are imbued into the process and made durable in the product created as well as exhibited in all the metrics and milestones created throughout the production cycles. By following these practices, the product is made more valid, more acceptable by others in the community, and particularly investors. It looks and feel like something legitimate. This cultural capital inherent in the object in turn gives the founders a higher status, and much greater opportunity for funding.

Institutionalized Cultural Capital

Finally the notion of institutionalized cultural capital suggests that cultural capital can come in the form of institutional recognition that can then be converted to economic capital. In the cases of JFDI and NXTP, teams benefit through the recognition of the brand and what that symbolizes in the community. Remi, of Obatech, noted this benefit: "As we go into investor meetings, JFDI's brand is definitely giving us credibility." In addition to the individuals and the products, the teams and their fledgling companies derive power and recognition through their participation in an accelerator that has legitimacy itself. They were selected from a large pool. Teams that participate in Y Combinator are broadly recognized and highly regarded in the startup community precisely because of the legitimacy the name provides.

5.4.3 Shaping a Cultural Toolkit

Each of these three forms of cultural capital provide startups with distinct advantages and power within the larger startup ecosystem or community-at the individual level, within the product, and for the team itself. Together, they constitute advantage or disadvantage in being part of a startup society— whether they are taken seriously by investors and others. Cultural capital can be translated into social capital; when someone is considered "just like us," the ability to connect to a wider network and utilize those connections becomes easier. In turn, this social capital translates back into economic capital. Having a broader social network within the startup world ensures great access to opportunities and to the necessary funding and investment to keep on going. Thus, the impact of cultural capital on a startup's ability to survive cannot be understated. This provides a rationale as to why the practices and cultural reproduction within accelerators

are important. Startup culture is indeed a toolkit that helps startups accomplish strategies of actions. However, as we have seen, discontinuities arise that may inhibit access to these forms of cultural capital and power and limit agency. These issues suggest that there must be a balanced take on the role of cultural reproduction and adaptation.

Accelerators could consider ways in which their very Silicon-Valley oriented cultural values can be promoted in a way that creates shared standards, while still being sensitive to different backgrounds and values. Rather than focusing on ways for participants to assimilate, accelerators can be more reflective about what values and activities are important and focus more on iterating the model and building these into practice. This requires both global accelerators and their startups to be more explicit about beliefs that are often hidden. An open dialogue about assumptions and values should be at the front end of an accelerator program, to help encourage exploration of ways to adapt methods and practices. The confluence of cultures participating in global accelerators provides a rich site, full of opportunity to learn. Taking the long view, should these founders become successful, they would become tomorrow's mentors to younger local entrepreneurs. Over time, perhaps this would create a startup ecosystem with its own adapted culture, just as Silicon Valley's culture evolved over the years organically.

CHAPTER 6. RITUAL TRANSFORMATION

Lean is often seen as a panacea for startups, and for other organizations trying to innovate. It can be valuable when used in the right ways, but it is not necessarily the most effective path to startup product development and innovation. Here I highlight some of these issues, but then take a look at the value of Lean in another light— its symbolic power . I illustrate Lean as a practice within startups fits the mold of a ritual—and how impactful such rituals can be in creating social order and cohesion and spreading beliefs and values. I examine the role this plays in the rites of passage of startups and legitimizing them within the larger startup community.

6.1 Challenges to Lean Startup as an Innovation Method

Lean is a model of innovation focused on experimentation and rapid iteration. The entire product development cycle is about building a hypothesis, testing, learning, and iterating on it. Lean tests for product viability. Using the Build-Measure-Learn framework, a startup can focus on reducing the time and labor involved in developing the product, putting products to test before too much investment. For teams who use it, Lean is also seen as a framework to create business value. It guides them to focus on one problem at a time and to test a proposed solution through experimentation. This is meant to help teams prioritize against the riskiest aspects of the business, putting the focus on building just enough to experiment and deferring all answers to experimental results. Combined with Customer Development processes, this helps teams define the scope of the product, while Agile development allows teams to realize the product in a defined time frame. The form of the product may change throughout the Lean process, but the intention is that motivation

and overarching vision of the team should remain intact, that is, unless validation fails, and they pivot, which fits into the larger Customer Development framework.

Lean has become a de facto gatekeeper. It establishes a benchmark, a way of life, a structure for startups. And it has spread rapidly as the core curricula of accelerators as they have sprouted up around the world. Everywhere I've been, startups are talking about Lean. Paula, of Retargetly, had helped bring Lean Startup Machine, a global workshop teaching the methods, to Buenos Aires. She said there was huge interest: "With LSM, we had capacity for 60 people. And we had 72. That showed how much people were interested in this. And it was not cheap— $200." Many of the teams I talked with said Lean had helped them in developing their product. MonoLibre said they were following Lean more than before the program. Now they were doing shorter cycles, which helped them. Mun Yew of TapTalents credited the Lean process as the biggest benefit of the accelerator. It had helped them focus, think analytically, and validate things. Ray also noted that they also provide structural value in the sense that they keep teams accountable. Lean is how accelerators currently address that need and keep teams focused. But while Lean may optimize for value creation, it is not as key to truly fostering innovation as many proclaim.

Lean may or may not always be the most effective approach to a problem. Like all frameworks and models, there are situations where Lean is the best cognitive framework, and there are times it isn't. While Lean is nimble in terms of both process and overhead, Lean is also restrictive. At the root of this are a rigid, scientific approach to development processes, a lack of user research, and core focus on metrics.

6.1.1 A Scientific Approach

The Lean methodology that accelerators use is very much rooted in the scientific method. Thus, it relies on establishing a hypothesis a priori. When assumptions are not weighed carefully and evaluated critically, this can pollute the results, findings, and conclusions of a Lean experiment. This is a dangerous outcome from following the methodology blindly. It turns a model for reality into a model of reality, creating a delusion, a so-called "false-positive." This often happens when teams misinterpret whether a problem exists or assume people need something they don't. Skimbl, for instance, was working on a sentiment analysis platform for food and beverage companies to glean customer feedback from social media. They kept talking to restauranteurs and asking them whether they would use something like this. They *said* yes, they would, but they didn't. Skimbl was creating a product they found intriguing, but it didn't really fulfill a need— restaurants use other methods of gathering feedback that are more reliable for decision-making.

Lean also assumes a linear and binary approach to finding a solution to a problem within a complex system. So teams will try out an idea, and if it doesn't work, they are supposed to pivot— essentially do something completely different. In the accelerators that I followed, despite the intense focus to build-measure-learn, several teams struggled and moved to pivot to an entirely new direction, rather than considering alternatives. Skimbl, following the example above, decided to try a completely new industry—retailer shopping, applying little to none of the feedback they learned from experience working in the food and beverage industry. That then failed, and they pivoted again.

On the other hand, it can conclude in a self-fulfilling prophecy where the product doesn't actually improve at all. Lean relies on an iterative approach. But if that approach is

structured incorrectly the best outcome might be to confirm the vision going into the process. This means you have an idea, you test it. The test goes well, so nothing changes. This is where the challenge of "local maximum" arises. A lot of teams focus on the solution, rather than testing the ways the problem could be better addressed. Some teams' products, like Zolvers, Vault Dragon, and CookApp were in this situation. They were good products, but they remained static, not really improving over the course of the accelerator.

Finally, Lean can also become a cyclical list of things to do and fall short of its purpose. Lean advocates believe that Customer Development and Agile form a continuous, non-stop process. When is enough Lean? The focus on process can result in "analysis paralysis," which is crippling to many startups. In the name of experimentation, they fail to make a decision to move forward. This happened with MOLOME. They had incredible signup numbers in the millions, but couldn't decide what to do—none of the data they collected was *that* convincing to them, so they just kept trying different experiments.

6.1.2 Early Adopters

While all startups come into an accelerator with at minimum a strong product idea, most have done little, if any, research into the context of the potential user. And in the accelerator, they do not do much of this either. Research is, rather, focused on validating the idea with early adopters, developing an MVP, and testing it, not learning about user needs. "Social proof"— what other people think is correct — is a major goal, rather than really understanding the user.

This can impact innovation, with teams either struggling to find a valid use for a new technology or bringing an established solution to a new market. Scrollback developed a browser-based Javascript chat tool to replace Internet Relay Chat (IRC). Scrollback is back-

ward compatible with the open protocol IRC of the past 20 years, which has not seen any major technology innovation through that period. The Scrollback team started with the technology and initially tried to bring on customers from universities, admission offices, online forums, other communities that presently used IRC. This did not work— they were already used to what they were using. On the opposite end of the spectrum, Vault Dragon created operational procedures to bring urban storage to customers. The team started with a focus on the existing market for which they wanted to develop a technology, but those users didn't need a technology. Both approached the problem at hand with experiments and metrics, modeling and replicating existing behaviors but failed to understand their potential users in any useful way.

This is an issue rooted in the larger, Lean structure as well as the networks of accelerators. There is a lack of focus in Lean methods on doing any sort of in depth user research. Those elements are often boiled down to understanding whether and how early adopters use a product and are often conducted through tools such as crazyegg.com, analytics Heat Maps, and A/B testing tools, like optimizely.com and unbounce.com. These are often supplemented by some interviews with actual users (early adopters) or cold calling potential would-be users. Doing and interpreting research with users is something generally left out of the teaching or guidance of accelerators in general.

6.1.3 Metrics

The Lean principles embedded in accelerators impose a very metrics-driven focus. In order to build, measure, and test their ideas, founders must focus on metrics to benchmark progress and make sense of data collected in the field. These metrics include things like:

- acquisition (the percentage of views that result in conversion),

- activation (the percentage that starts using the product), and

- retention (the percentage of users that return to use the product or service again).

These are all "good" metrics on which Lean focuses, although there are also "vanity metrics" that many argue against, like monthly or daily active users[6]. Metrics play a large role in teams' decision-making process and shape their understanding of their product and its use.

But where metrics provide direction, they can also add pressure for the teams to perform and compete, without questioning the goals. For instance, teams try to optimize for things like conversion rates before they are even certain of their business direction. When a team is too eager to move forward to obtain a milestone, they may not be optimizing for the right thing.

Another common issue is that these benchmarks are often one-size-fit-all. Metrics tend to be overly-simplistic representations of a complex system. The emphasis on metrics can pose a danger by giving false reassurance of progress and growth. Or, on the other hand, can force abandonment of an idea —a pivot— prematurely.

The problem therein is that metrics provide no meaning or insight. The metrics focus on linear growth and projections to measure progress, and they only act as a scale to measure how successful or not one potential solution has been. And even at that, they are often not indicative of anything beyond a binary. That is to say that we may know that users returned. But we do not necessarily know why. Metrics don't expand one's insight around

---

[6] For other analysis of metrics, see: Doshi, S. 2012. Bullshit Metrics. http://sufficientlyadvanced.net/bullshit-metrics

solving a particular problem or developing potential solutions. Over several conversations

with MeroArte, Arturo suggested they really needed to "measure engagement." The team

worked to do more analytics, but they never talked with potential users, so they didn't

really know what was actually engaging about the product. This was common among a lot

of teams, like MOLOME, who deferred to metrics, rather than getting insight from their

users. As a result, founders approach continuing development of their idea assuming they

know and understand the complex system in which they are introducing the product.

Lastly, and perhaps most frustrating for startups, is that metrics can add

bureaucratic overhead. Gorsh wanted to move into Brazil as a market for a number of

reasons, but Arturo said they needed metrics, numbers to show they should move into

Brazil. He suggested they talk to a mentor who was particularly adept at analytics to figure

out what to measure. These metrics force teams to work within that specific structure to

show progress, rather than following their own journey.

6.1.4 An Innovation Focus vs. a Social Focus

These points raise some issues around Lean as an innovation practice. It leads to

exploring only one potential solution or idea at a time. It only evaluates numerical criteria.

And it does not lead us to know in any depth the users themselves, the use of the product,

the dynamic contexts surrounding its use, or the complex settings of which it becomes a

part. By contrast, Lean seemed very valuable and productive in other, unintended ways,

particularly for the teams themselves. As I will explain in the next section, from a ritual

view, Lean has great power and value.

6.2 Lean's Symbolic Value

Lean is a symbolic process of action that has tremendous cognitive, emotional, and behavioral power. It is observable in practice, along with its affiliated symbols and myths. But it also alludes to some of the values and beliefs of startup culture, and some of the underlying assumptions at the root of tech entrepreneurialism. Performing Lean is an embodied, experiential process. And as such, it underlies the conviction of the startup and gives them faith in themselves. As Geertz said: "In a ritual, the world as lived and the world as imagined, fused under the agency of a single set of symbolic forms, turn out to be the same world, producing thus that idiosyncratic transformation in one's sense of reality..." (Geertz 1973, p. 112). That is to say, performing Lean processes both embodies the way things should be and also makes them so. Doing the process makes it real. It can function as a system of meaning and a ritual structure, engendering faith in the team and product, and transforming the startups themselves. In the following sections, I briefly highlight the myths and symbols central to Lean, then highlight the power of Lean as a ritual.

6.2.1 Innovation Myths

Myths are not necessarily pure fiction; there is often some truth to them. But the power of myth goes far beyond telling a story. From a broad cultural viewpoint, they explain things, teach values, and define a group's identity. And from an organization standpoint, myth is influential both in shaping organizations and giving them confidence. Meyer and Rowan (1977) argue that organization forms are driven by what they call "institutional myths." They suggest that myths, rather than effective organizational outcomes, often shape

an organization. They explain, "The more an organization's structure is derived from institutionalized myths, the more it maintains elaborate displays of confidence, satisfaction, and good faith, internally and externally" (1977). Myths are a guiding structure.

Some of the core myths emerging from Silicon Valley shape the tech industry at large. Among them, notably are:

- the "garage" creation myth[7] originating with Hewlett and Packard,

- romanticized mythic notions of the lone innovator[8] a la Steve Jobs, and

- the myth of the epiphany, emerging from stories such as Larry Page's idea of Google coming to him in a dream[9].

Some of these can be considered damaging, some perhaps productive, but all of them present a story that represents values, identity, and aspirations rather than a full picture. Mahajan explains "the canonical Valley mythology is a series of elisions" (Mahajan 2014). They are rooted in truth, but they leave out a lot of details.

Similar myths guide the startup community globally, particularly ones about things like: overnight startup success, failing fast, "hockey-stick" growth, or being able to create a good product in week. There is some truth, in these, but they serve more to embody an ideology and serve as aspirational goals, which then shape the actions people take. In particular these guide the way many founders think about success, which is then embodied in the rituals they perform— like Lean.

---

[7] http://physicsfrontline.aps.org/2012/11/28/the-vaunted-garage-creation-myth-why-it-damages-the-federal-science-enterprise/

[8] http://www.theatlantic.com/business/archive/2011/11/the-myth-of-the-innovator-hero/248291/

[9] http://www.businessinsider.com/larry-page-the-untold-story-2014-4

6.2.2 Lean Startup Symbols

Symbols can be anything from objects, gestures, and words, to relationships, events, or activities (Turner 1967). They are considered the smallest unit of rituals, and they carry great meaning. Here I discuss some of the key symbols in accelerators, and startups more broadly, which all play a role in Lean as a ritual.

The Lean Cycle and Canvas

Lean provides meaning and is embedded with symbols, like the build-measure-learn cycle, which can be seen as a ritual set of processes utilizing concepts, objects, data, and actions in a sequence to provide a cognitive framework. The whole point is to validate an idea. That makes the process —and where you are in it— meaningful and valuable. Symbolic representations, like the Lean Cycle and Lean Canvas serve as a tangible way to convey very abstract ideas. At a meeting of the Startup Weekend NEXT program in Buenos Aires, Leandro, who works at an accelerator in Cordoba showed images of the structures and described the tools. He drew lots of shapes and lines, explaining, "Short boxes are bridges, connecting the larger sections. The more rapidly you can figure out these parts (the small boxes, the "action"), the faster you can move forward." These visual served as symbols of direction and progress within Lean for reflection and action, but also visually communicated this for others, especially stakeholders. They are symbolic of action, goals, and progress.

Lexicon

Lean and its affiliated practices, like Customer Development, provide a vocabulary to communicate within the team and to discuss progress with stakeholders. Words like

"churn," "dealflow," "traction," and "funnel" are frequently used, as are common phrases such as "early adopters," "product-market-fit," and "problem-solution-fit." In Argentina, these English words and phrases peppered otherwise fully-Spanish conversations. They were symbolic of knowledge of the system and being part of the startup world. During a Lean workshop at NXTP, Gabi raised her hand in the middle of a presentation to ask what "churn" was, which immediately positioned her as being less knowledgeable.

Metrics

Beyond the terminologies and the keywords, startups and stakeholders are highly focused on metrics. As discussed, metrics play a large role in Lean. These are symbolic representations of a startup's progress. In conversations, I have often heard people boast about conversion rates or refer to benchmarks. But beyond being symbolic of a specific milestone, they largely symbolize success and legitimacy. At JFDI, these symbols were displayed in a particularly public way (Figure 6.1). A spreadsheet based on metrics and Lean milestones tracked every team's progress in bright red or green cells. And this spreadsheet was projected in three places, running along the wall of the main office workroom, all day, every day, for all to see. Turning a cell green during a check-in meeting was highly symbolic for the teams. It was validation— a reason to relax a minute and celebrate their accomplishment in their Lean Startup journey.

Metrics are also a form of currency. Investors and founders nod and fire off questions based on their perception of how well, or how poorly, a startup is doing, based on such metrics. With the right metrics, a startup can garner more fundings; without, it's unlikely. Thus metrics are also largely symbolic survival.

72 days to go	enMarkit	CloudJay/FieldJay (fka Lifebox)	Healint	MOLOME	Skimbl	Vault Dragon	Obatech (fka ZhenXin)	Qwikwire
This Week's Metric	• A/B CTA (messaging) or Thesis (force 50% to login)	• connect with 100 PMs/PEs	• Francois: complete pitch • Veronica: LOIs, and downloads • Karin: close one study (of two potential epilepsy)	• benchmark for meme user and engaged user (on Agenda)	• Find a problem pattern	• consumer conversion rate: boxes delivered/number enquiries • B2B interviews: validate persona, budget, etc	Business • Conversion rate (benchmark) and gross # email addresses obtained Product • Design user research experiment	• get a base line of acquisition/activation rate: rollout by 11/15 with freelancers • concierge—closed beta: to have 5 transactions freelancers/Beanstalk • tests: usability, payee, receiver
Can we confidently articulate the Big Vision briefly and at length?	362 days ago		354 days ago	354 days ago		360 days ago	359 days ago	359 days ago
Do we UNDERSTAND the problem domain as well as most experts?	327 days ago	334 days ago	361 days ago	361 days ago		360 days ago	352 days ago	352 days ago
Have we identified a specific first CUSTOMER?	303 days ago		340 days ago	354 days ago	289 days ago	360 days ago	331 days ago	352 days ago
Do we bring new INSIGHT or DESIGN to the field?	341 days ago		340 days ago	354 days ago	289 days ago	360 days ago	282 days ago	324 days ago
Have we confirmed a SPECIFIC user/customer problem or opportunity through interviews?	320 days ago		317 days ago	309 days ago		360 days ago	309 days ago	345 days ago
Have we built a SOLUTION that matches that problem? (MVP taken into account of the problem)	285 days ago		284 days ago	309 days ago		324 days ago		331 days ago
Does the solution DIFFERENTIATE from current competitors through a UVP? (both sides of the platform)	299 days ago		298 days ago			324 days ago	282 days ago	324 days ago
Have we confirmed a CHANNEL to reach our market? (B2B/B2C)	303 days ago		284 days ago	309 days ago	289 days ago	304 days ago	303 days ago	310 days ago
Do we understand the conversion mechanics of our sales FUNNEL? (B2B/B2C)			284 days ago			289 days ago		
Can we confirm PROBLEM / SOLUTION FIT in the form of an MVP						289 days ago		
- TRACTION and GROWTH?						304 days ago		

Figure 6.1: JFDI's Metric Board

6.2.3 Lean as a Ritual

In his studies of the Ndembu people, anthropologist Victor Turner described ritual as "a stereotyped sequence of activities involving gestures, words, and objects, performed in a sequestered place, and designed to influence preternatural entities or forces on behalf of the actors' goals and interests" (Turner 1977, p. 183). Like religious rituals and rites of passage, Lean's build-measure-learn activities can be seen as a ritual set of processes utilizing concepts, objects, data, and actions in a sequence for various ends. As a ritual, Lean is a symbolic process of action that has tremendous cognitive, emotional, and behavioral power. Here I describe some of the ways in which Lean functions as a ritual.

Build-Measure-Learn Structure

117

Like religious rituals, Lean attempts to control the unpredictable and unknowable. It delineates processes bound by rules specifying attention and significance. Performing these processes helps to make sense out of the chaos of working under radical uncertainty, easing startups' anxieties. As a ritual, Lean also helps to manage a startup's work structure. It gives the team a direction and pre-defined ways of knowing what to do next. Agile sprints, timeboxing activities, and sequential milestones help create a temporal structure and rhythm. Rituals also help signify and emphasize important events. Validation is a significant event, although it perhaps gets less and less significant as iterative cycles continue. A key event that Lean processes create is forcing a pivot, in which the team moves into an entirely new direction.

Values

Lean also instills important values about startup culture by forcing experimentation, imperfection, and confidence in one's product. Implicitly, these promote core values like taking risks, accepting failure, valuing openness, collaboration, and a flat hierarchy, and being resourceful.

Belief and Faith

As with any ritual, the process separates the believers from the non-believers. Within a startup group, a believers' adherence to Lean signals commitment to the team. Engendering trust in the process therefore also creates social cohesion. Those unwilling to go through the process of testing out and validating or rejecting the idea show lack of commitment that can lead to dissension. In performing the process together, it also creates consensus in the group. Arjun Appadurai identified ritual as "a flexible formula of

performances through which social effects are produced and new states of feeling and connection are created" (Appadurai 2004, p. 79). Lean is also an embodied, experiential process. And as such, it underlies the conviction of the startup and gives them faith— in themselves. That is to say, performing Lean processes both embodies the way things should be and also makes them so. Doing the process makes it real.

Social Order and Transformation

Lean also help create and reinforce social order through rules, shared meaning, and roles. Each iteration through the process gives this more definition. In the beginning teams are working in the abstract— just trying to figure out what to do next. As they move forward and iterate, the specific roles of individuals become clearer. As startups move through these processes, it both transforms them and creates group solidarity.

Importantly, all of this ritual plays a deep role in legitimizing a startup within the larger startup community. Lean is a ritual that a startup is supposed to go through. Together these things constitute advantage or disadvantage in being part of startup society — determining whether startups are taken seriously by investors and others.

6.3 Rites of Passage

At a larger level, the whole process of participating in an accelerator can be viewed as a rite of passage or initiation, with Lean being a key ritual. Just as rites of passage to adulthood, these teams move from the stage of infancy— some just being a couple of friends with an idea— to becoming a recognized technology startup. In his work on rites of passage, Van Gennep had a 3-step structure:

1) preliminal rites, or rites of separation, which centers on breaking with previous practices or routines;

2) liminal rites, the middle stage, which follows a prescribed sequence; and

3) postliminal rites, or rites of incorporation in which the person is reincorporated with a new identity.

The process involves change in social status through the whole ritual and typically ends in a ceremony or celebration.

We can look at accelerators as a rite of passage. They begin with a separation. Many, if not most of the participants come from other places to attend an accelerator, some from halfway around the world. Many of them leave family. They are not only physically separated from their homes, they are also often breaking with all of their regular practices and routines. While some founders are working full-time on their startups before they enter the program, many have other jobs or commitments. Some quit their job, others take a leave from work or school. When they arrive in places like Singapore or Buenos Aires, they have to find a new home, create a new rhythm, and focus on their startup full time.

Once they arrive, the order they knew in their lives is gone. They are now in a transition period— a liminal (or liminoid, which Turner considers the more appropriate term for phenomena that take place in the complex industrial world) space (Turner, Harris, & Park 1983). They are in a new place, with new people, and are being inducted into a new culture. Coming from different backgrounds, each team and individual go through their own unique challenges. But they are also going through these challenges with a cohort of other startups. As they move through these processes, it both transforms them and creates group solidarity.

The teams are transformed from a group with a nebulous idea to a solidified startup

through this rite of passage. And going through this arduous process together creates a

sense of what Turner called communitas— a social bond that engenders loyalty and

solidarity. At the end, there is Demo Day— a ceremonial end to the rite of passage. The

teams are now adult startups. They are part of a group that has shared values and goals and

has built trust and solidarity. And they either stay, return home or move to wherever they

intend their startup to be with this experience, the network, and a new sense of legitimacy.

6.3.1 Innovation Process or Ritual

My aim is not to critique Lean as a methodology, but rather to point out its

surprising role in the social realm in contrast with its touted role in innovation. Lean can be

viewed in many lights. It is a set of processes, or a philosophy that creates value as

a business development approach. It is a method to develop products through

experimentation, learning, and iteration. And, in accelerators it is a ritual that guides

startups, serving as a system of meaning, a model for behaving and a performative outlet.

But this does not mean it is always valuable socially either, especially with the need to

conform.

As Lean and metrics become the main communication medium in which

stakeholders connect with one another, there is a question of just how many people are

actually practitioners of Lean. Expectant stakeholders want to hear how a startup

benchmarks against others. Instead of enhancing group solidarity and helping founders

navigating uncertainties, the expectation of participation in Lean can create opposite

effects. It can add social pressure, create hollow commitments, and induce stress in being

included as part of the club. There is a high cost associated with perceived participation.

More often than not, startup founders are happy to say they practice Lean. They use the

metrics, the lingo, and go through the motions, but it is often a meaningless mantra, which

means it is not playing a role in product development at all. And this perpetuates because

there is a need to fit in.

CHAPTER 7. TRANSFORMING PRACTICE

As the case of Lean as a ritual practice shows, practices are not always what they seem. Lean is a practice intended for productive, innovative purposes, but is just as powerful, if not more, in shaping teams socially, driving identity and legitimacy. In this chapter, I highligh how one practice— the pitch— was transformative in other ways. Feldman and Orlikowski (2011) note that by focusing on practice at an empirical level, we can understand organizational phenomena as constantly changing through everyday action. And by focusing on practice theory, "we understand the mutually constitutive ways in which agency is shaped by but also produces, reinforces, and changes its structural conditions" (Feldman & Orlikowski 2011, p. 1250).

While both JFDI and NXTP had a variety of dynamic practices shaping the accelerator and the teams within it, I was struck by the intensive focus on the pitch within JFDI over the course of the program and its multiple roles that emerged in practice. Rather than being a mere rhetorical format for presenting information to potential investors, pitching emerged as playing both a central role in the design of the technology as a product and in shaping the identity of the startup itself. In the following sections, I draw on the theoretical frameworks of boundary objects and figured worlds to highlight the pitch as a site of imagination for design and an important medium for collaboration. And I explore the act of pitching as integral to the formation of identity and agency of the startup team. I discuss the pitch as a critical component in the development of these startups and their technological artifacts and the implications on the values inherent in the technologies.

Figure 7.1: Pitching at Demo Day

7.1 The Pitch as a Mundane Practice

Pitching is an integral activity that every entrepreneur quickly becomes familiar with. From first-time entrepreneurs pitching in front of an audience at a StartupWeekend or TechCrunch Disrupt, to accelerator-groomed startup teams pitching at Demo Days (Figure 7.1) in front of sophisticated investors —the format and the act of pitching are a core focus for startups and their interlocutors: those who work with, may invest in, or potentially will use products from startups. With the current wave of technology startups in Silicon Valley and worldwide, pitching typically involves a brief oral presentation, often supplemented by slides that illustrate the product and business idea.

While there is a lack of historical research on the concept of the pitch and how it has evolved over the years, the model for startups can be loosely traced back to the format of business plan presentations of the 1990s and early 2000s. Since then, the popularization of Lean Startup methodology within both startups and the enterprise world has led to a deemphasis on business plan presentation. Central to the Lean philosophy is that ideas and the customer environment change so quickly in today's businesses that "no business plan survives first contact with a customer" (Blank & Dorf 2012). While the form of the product may change throughout the Lean process, the motivation and overarching vision of the team should remain intact, even in spite of pivots. Likewise, the way of communicating the product must convey these key points, but also be nimble and flexible in changing with the product.

The primary perceived role of the pitch is to garner interest and, ideally, investment in the product. Previous studies have shown that: "assessing the creative potential of new ideas and their proponents is done initially and primarily on the basis of subjective assessments made during face-to-face interviews, or 'pitches'" (Elsbach & Kramer 2003). Within minutes, evaluators make up their assessment of the idea and the team based on the delivery and content of the pitch. In this way, it is meant to be a tool to "discover" the top ideas; less than 5% of entrepreneurs are successful in garnering funding, even from a pool of pre-screened startups (Maxwell & Lévesque 2010).

Other studies have focused on pitches as a conduit for entrepreneurs to convey confidence and to manage impressions (Nagy et al. 2012), and have examined how well-crafted pitches legitimize entrepreneurs and the business idea through both resource capital and institutional capital (Lounsbury & Glynn 2001). Beyond that, there is scant

research on the role of the pitch, and in particular the potential of the pitch to function in ways other than a communication or fundraising tool.

7.1.1 Structure of a Pitch

There are many archetypes of the pitch, and both startup pundits and academics have put forth formats they consider preferential to others (Nivi & Ravikant 2008; Osterwalder, Pigneur, & Clark 2010). The sequence of the content may vary, but in addition to the idea, a pitch generally covers:

- background of the founding team,

- business model,

- market potential,

- customers and traction, and

- a request—typically funding.

Traditionally, investors and sponsors have evaluated the potential of a new idea from hearing thousands of pitches that last several minutes to half an hour (Clark 2008). However, from this research, it appears that most pitches, particularly within accelerators, aim to last between 2 to 10 minutes.

At the JFDI field site, Ray, the accelerator manager and Peter, the pitching coach who had a professional background as an actor, were the primary parties working with the teams on the structure of the pitch. Their focus was on helping the teams deliver pitches that were very narrative-driven and powerfully presented in 6 minutes. The manager provided the following structure for the teams to focus on and follow:

"Opening: Start strong with an emotional & relatable opening

Problem: Twist the knife in the wound, help people understand the problem

Solution: Clarity sets in, mind blown

Traction: Investors 'Oh, this actually has some meat'

Market: Investors 'This is credible, believable'

Business Model: Investors say 'Wow, I need to talk to this guy'

Team: Convince them why your expertise gives you an advantage

Vision: Your wildest dreams, where to take this in medium/long term

The Ask: Give them a reason to engage

Closing: Remind them of the 3 things you want them to remember"

As can be seen in the structure above, the pitch was clearly meant to appeal to an investor point-of-view and aimed at fundraising. It focused on elements that aim to distinguish the startup and garner investment. But, in practice, the pitch functioned in a multiplicity of ways. These functions can more clearly be understood through the lenses of boundary objects and figured worlds.

7.2 Re-framing the Pitch

My approach to examining the multiple roles of the pitch (and pitching) is grounded primarily through two frameworks: that of boundary objects and that of figured worlds. I will briefly explain both here, but delve into how they apply in depth in following sections.

The concept of boundary objects has been used (and misused) in a wide variety of ways since Star and Griesemer (1989) first described how boundary objects help translate between different social worlds. They are plastic enough to adapt to constraints, but robust enough to have a common identity; they have different meanings to different parties, yet their structure is identifiable to multiple worlds, making them a means of translation.

Within startups' development, there are many boundary objects to consider, some of which help translate between different disciplines or roles in the design and development processes and some that link to other social worlds. Thinking of boundary objects draws attention to what is being translated and how it is utilized to different ends. The pitch can then be seen in terms of its utility as a tool for imagination and as an entity that can link different groups together for collaboration.

Figured worlds is a framework that highlights the roles of activity and improvisation in creating identity. Urrieta explains that figured worlds are formed through social interaction, and in them people 'figure out' who they are in relation to those around them (Urrieta 2007). Holland et al. (1998) initially introduced the theory, illustrating how people experiment and participate in activities that allow them to engage in *conceptual* and *procedural identity production* (Urrieta 2007). The conceptual process is internal— a sense-making process of what they want to be. The procedural one is the practice or performance of that identity. Using this lens, I will frame pitching as a catalyst for reflection and identity shaping as well as a performative practice that provides confidence and a sense of agency.

Over the course of my research, it became clear that pitching was critical point of focus within the accelerator programs and the startup. However, the emphasis on pitching and the way the two fieldsites approached it were quite different. At NXTP, the teams practiced pitching, but rarely as a group. The first couple of weeks of the program, they practiced pitching to introduce the teams to the format and to prepare them for the mentor speed dating day. But after, there was a hiatus for a while, and the teams did not focus on pitching again until about a month before demo day.

Figure 7.2: Pitching Practice at JFDI

At JFDI, however, teams began pitching formally from the first day of the program, and pitched at least once, but often several times a week for the 14-week duration, with the frequency crescendoing over the course of the accelerator. The pitch sessions (Figure 7.2) were not just quick pitch practices, but were very detailed sessions in which peers from other teams, accelerator personnel, mentors, and others provided feedback and engaged in discussion around the product, the startup, and all of the elements playing a role in their continuing development. Additionally, informal pitching occurred often each week, in the form of pitching to peers, mentors, investors, etcetera at networking events and informal gatherings.

Over the course of the fieldwork, the pitch emerged as not just a mere presentation tool for acquiring funding, but as larger frame through which to trace the development of

the teams and their products. Using this structure for analysis, I combined field notes from pitch sessions, the accelerator managers' and coaches' notes on team pitches, videos of the pitch practice sessions and demo day, team slide decks, and material from formal and informal interviews. From this corpus, I could follow each startups' trajectory over the program, uncover patterns in the process, and develop insights into the role of the pitch.

In the following sections I delve into findings on the roles of both the *pitch* and the act of *pitching*. Using the theoretical lenses of boundary objects and figured worlds and examples from our research, I highlight the pitch as a site of imagination for design and an important medium for collaboration and the act of pitching as integral to the formation of identity and agency, or empowerment, of the startup team. I then discuss how the pitch ought be considered further in discussions of design and collaboration, both theoretically and practically.

7.3 The Pitch in the Design Process

At face value, the pitch itself is a rhetorical device that combines artifacts, actions, and actors. But in practice, the pitch becomes something that goes beyond a place to simply center discourse. It functions as a boundary object through which ideas and meanings can be imagined, translated, and reshaped both for and by different parties: designer, developer, CEO, as well as mentors from different disciplines and domains, investors, customers—both real and potential, end users, media, service providers, and more. While the actual product itself can also be considered a boundary object much in the same way, the pitch functions as a more lightweight object. It is highly structured, yet fluid, so it that can be easily adapted in

the exploration and imagination of the product. And because it is easily translated, it serves as a medium through which open-ended collaboration can occur.

7.3.1 The Pitch as a Site of Imagination

Obatech's founders Remi and Ruey joined JFDI's program with the goal of developing a technological solution to eradicate fake drugs in Indonesia. As a very early-stage startup, Obatech had minimal resources at its disposal to accomplish such a grand vision. While JFDI provides initial seed funding, mentoring, networks, and other resources, the startups they support must still be scrappy and resourceful; they must function as modern-day bricoleurs, constructing and iterating their products using what tools and materials they can. For Obatech, then, the pitch became the primary way to explore this vision and imagine potential solutions. Over the course of the program, they experimented with their product vision and the ways in which they might develop the solution— but they primarily did this through the structure of the pitch.

At the beginning of the program, Obatech's focus was to create "a mobile-based validation platform connecting good pharma to patients in an emerging market." Over the first several weeks, the pair focused on this consumer-based solution, articulating this in their weekly pitch sessions with the accelerator managers, mentors and the other teams. But the consistent feedback they received in pitch sessions forced the founders to reconsider how this solution would work in reality. Would users really be motivated to scan their own drugs? Would they have the ability to, considering the low smartphone penetration rates in Indonesia?

Still lacking the resources to develop a pilot study with a prototype, the team began exploring other possibilities, using their pitch as a boundary object, the way to

communicate with others, and as a site of imagination— a tangible place to explore an idea. As the team reported their first positive interactions with two regional pharmaceutical companies, they started to imagine these pharmaceutical companies as their customers, re-centering their pitch to reflect this focus. Over the next several weeks, the team built a relationship with an Indonesian pharmacy chain and modified their pitch to envision a new solution that would help them reach their end goals. Their pitches progressed through the course of the program and reflected the way the founders imagined who their users might actually be and how they might solve the problem they set out to address. The ultimate outcome was an integrated solution that included: a patient-facing mobile application that "helps patients with chronic disease buy medicines more cheaply and take them more regularly"; a back-end that enables doctors to monitor this; and data analytics to help pharmaceutical manufacturers.

The pitch and the format employed at JFDI helped the founders imagine a solution, extrapolating from their current situation to envision a future viable product. In this respect, the pitch functioned as a tool for imagination and design, much as how other tools have enabled such exploration. For instance, Mukerji (2014) explains how illustrated books aided stone cutters in imagining the shapes of new constructions. Her work on Abraham Bosse's 17th century book on projective geometry explains how the geometry was not used as a form of reasoning, but rather as "a cognitive tool for imagining buildings that were yet unbuilt" (Mukerji 2014). Likewise, Obatech did not use pitching as a form of fundraising, but as a tool for ideating by "trying on" different solutions, articulating possible product visions to other social worlds and exploring, adapting, or reinforcing the founders' decisions. Obatech did not have a functional product by the end of the program; the

132

integrated infrastructures of such a product require much more time for prototyping and development. But, through the vehicle of the pitch, they were about to set their product vision and flesh out their design direction as they moved forward in development.

7.3.2 Collaboration through the Pitch

Healint, another startup at JFDI, was formed by highly qualified and experienced team members in the healthcare field who aimed to adapt sensors in smartphones to collect meaningful data from patients' everyday behaviors and use machine learning algorithms to help make healthcare predictive, not reactive. In short, they wanted to develop something revolutionary— what they described as Healthcare 2.0. In the near term, though, the team had to determine the best way to develop and test its technology for very specific uses. Using the pitch as a boundary object, they were able to translate their ideas to multiple stakeholders, such as patients, doctors, healthcare organizations, and insurance providers, and garner feedback from people in a variety of domains, creating a form of open collaboration on the eventual product.

Healint's initial aim was to develop their product for a pharmaceutical company or medical device company to utilize the behavioral data. Two teams who had already been through the JFDI program previously had focused on healthcare technologies and had a lot of feedback for Healint. Among other critique and suggestions, they recommended the team explore their ideas specifically with physicians. To lend credibility to the pitch from both resource capital and institutional capital perspectives (Lounsbury & Glynn 2001), the team needed to show their ability to persuade neurosurgeons to get behind their vision. In doing this, they found a new product direction: physicians were actually interested in this as a prescriptive tool to monitor individual patients. Over the ensuing weeks of pitching to

different audiences, the team began to see its technology best suited for preventative

measures against epilepsy and stroke in individual patients. They pursued development of

a product to monitor the daily actions of epilepsy patients through smartphone sensors,

which would aid these patients' personal physicians in connecting data from their everyday

lives to the patients' seizures. This very specific focus was refined iteratively through

pitching as a way to test the validity of the idea before tailoring the development in any one

direction.

The pitch in this sense served as a collaboration tool much in the same ways

Feurstein et al. (2008) describe "living lab" co-design activities: collaboration as critical and

generative. As a structure for open critique, conflict, and feedback, the pitch sessions

fostered open collaboration. The weekly pitch sessions served as a space for all of the

teams, the accelerator managers, mentors, and alumni of the program's previous batches to

collectively ask questions, provide feedback, and suggest ideas. In these sessions, both

individuals and the collective feedback had a direct impact on Healint's product direction.

But the pitch also served as a collaboration medium in less formal scenarios: over a casual

conversation and a cup of coffee with other founders or mentors or at networking events

with investors, healthcare providers, or physicians. In this sense, collaboration also

occurred through exchange and feedback within various sorts of communities of practice,

much in the way Wenger (1999) describes boundary objects as entities allowing

collaboration by linking communities. Healint's team began with a focus on neurological

conditions, and slowly refined the development direction of the technology throughout the

majority of the program through both formal and informal pitches, ultimately developing a

more targeted, useful technology through collaboration with others.

7.4 Pitching, Identity, and Agency

From a rhetorical perspective, pitching functions as a persuasive speech, combining the five canons of rhetoric from antiquity: invention, arrangement, style, memory, and delivery. But pitching functions in much more integral ways, helping the startups to be self-reflective about who they are and who they want to be. Taking *figured worlds* as a frame (Holland et al. 1998; Urrieta 2007) , I highlight the ways in which the act of developing and giving a pitch plays a role in the conceptual and procedural production of identity and agency. The activity of crafting a pitch forces introspection and a focus on how a team figures themselves in a larger context as a startup in a domain, market, or ecosystem. Giving a pitch, then, forces a performance of this identity and if the identity is authentic, it instills a sense of confidence and agency.

7.4.1 Pitching & Identity: a Conceptual Process

Skimbl's founders Louis, Luc, and Sam were unsure about where their business and product were progressing through the first nine weeks of the program. They had developed a sentiment-analysis tool to help foreign-owned restaurants in Shanghai, where they lived, understand the sentiments of their customers on social media. But the team struggled to understand how they could adapt a Chinese-language sentiment-analysis product in Singapore and other markets. While the product made revenue at the time, its projected market size of $26.4 million did not seem up to par with its peers in the JFDI program, causing them to question their whole business. The very first sign of their dissolving identity surfaced in week ten's check-in meeting. The team stressed that while restaurants

as customers had been their primary focus, they felt their customer base was not large enough.

In the subsequent weeks after this realization, the team members, and especially the business founder, Louis, were distraught. JFDI's coaching of the pitch format encouraged the founders to verbalize the personal connection they have with their business idea. This process gave teams a way to reflect on and vocalize reasons and beliefs that they associated with their identities. Over the following three weeks, while Skimbl struggled with the company's direction and the team started to pitch completely new businesses, they felt lost. One of the main stumbling blocks emerged when the founders realized they could not articulate why they started in the restaurant business. By pitching a completely new business focused on using sensors in retail during the following weeks, the team further exacerbated the disconnection and started to question who they were and what they were doing as a startup.

During this period, the accelerator manager and the pitching coach at JFDI held the team to the regular pitching schedule. They and the team spent time on retracing Skimbl's journey through the program. In the midst of determining their direction, Louis focused on pitching what they had achieved and how they were a strong team that had stuck together through failure and fought their way back: "We failed together, went broke, but we learned our lessons. We've been meeting more than 200 companies, and we bootstrapped this business from scratch."

The team reworked their pitch to highlight some of these achievements, which had the effect of refocusing the team on the growth of their product and giving them a sense of renewed identity. As a reflective process, the pitching exercises aided in identity formation

for the team. It was an exercise in "figured worlding." Tracing their path in order to create a pitch was a conceptual process in which they dealt with sense-making around their technology product and its market and produced and reinforced the team's identity— who they wanted to be as a startup. And the act of pitching that identity gave them a renewed sense of agency.

7.4.2 Pitching and Agency: a Procedural Process

MOLOME's founders had a business that grew by 800 new users a day. Its product was a fun and lighthearted mobile app that allows users to decorate and meme-ify photographs on their smartphones. It was not one that solved a particular problem. This posed a significant challenge to Arthur, the CEO, as he grappled with the format of the pitch, which called for an impressive opening that related his passion and the problem that his product was solving. The motivation to appear confident (Nagy et al. 2012) was the catalyst that propelled him, and he experimented with many different ways to convey his confidence in the business.

For the first ten weeks of the program, Arthur tried to articulate his passion by highlighting the revenue prospect of the business and positioning MOLOME as a brand engagement tool. But in reality, neither Arthur nor the rest of the MOLOME team had experience in brand advertisement. It was a vision still far away; by week ten, they had only engaged three brands in advertising. This held back Arthur's enthusiasm and, in turn, his confidence, each time he pitched the business.

Leading up to the last week of the program and in preparation for the pitch to investors on stage at Demo Day, Arthur and the accelerator managers focused on the opening of the pitch solely — the part of the pitch that typically conveys the problem and

solution and provides a personal connection. In one improvisational pitch, Arthur changed the focus from solving a problem for brands to its success with its users and examples of their "play" through the app. He approached pitching with renewed fervor. The pitching exercises allowed the MOLOME team to recognize the disingenuousness of their story and, together, they created a presentation that allowed them express their passion for memes and jokes that was the core of the product. As an improvisational process, the performance of the pitch helped reinforce an identity they found to be true and, in turn, instilled a sense of confidence in Arthur and the rest of the team.

7.5 Pitching as a Transformative Practice

Pitching is often considered simply as a rhetorical structure for presenting to investors, or perhaps to other audiences, wherein the focus is typically the intention to sell an idea and appear legitimate. In this view, the pitch is about taking the reality of the product or startup that is "out there" in existence, and presenting that in a concise format. But in reality, the pitch is often playing a dynamic role in the continuing development of both. Rather than being a mere presentation, it functions in multiple ways, influencing ideas for design, collaboration, identity and agency. While this research focused on the pitches of startups in accelerators, in reality, the pitch likely functions in similar ways in all sorts of venues and domains. Thus the pitch should be taken more seriously. It is not simply a presentation format; it does much more work.

Emerging from this research, I find that within startup accelerators, the pitch serves as a flexible tool that, in practice, is used in imagining new design solutions and collaborating with others in the larger ecosystem in a very open-ended way. Moreover,

pitching as an activity plays a critical component in the emerging identities of the startups

and fosters a sense of agency in moving forward with development. For startups, these

practices most certainly shape the technological products that are created. And they also

inform decisions on which markets are targeted. Thus, in large part, they play a role in the

values embedded in the technology and its use, which I will now detail in the following

section.

7.5.1 The Pitch as a Design Tool

On a larger, theoretical level, we should consider the agency of the pitch and its role

in the design process. While there are many different models of design processes and

design thinking, all begin with some combination of researching or empathizing, defining

the space, and ideating before the act of prototyping begins. While much work in the design

realm focuses on the material engagements and processes of design that follow from these

initial stages, it is clear that these stages are an incredibly important part of enacting design

processes and the ultimate product that is realized. From this research, we can see that

pitching serves an important role in these initial stages of conceptual design and testing out

the idea of a product before (and also after) engaging in material design practices. Others

have noted the agency of materials in the design process, and how they can serve as actants

(Tholander, Normark, & Rossitto 2012). Similarly, I argue that the pitch serves as a practice

that has a great deal of agency in the design process. There are many benefits to

considering the pitch in this way. It focuses much-needed attention to the idea development

stages of design that happen both before and concurrent with material engagement. And it

forces a reconsideration of what processes, engagements, and phenomena might actually be

considered as playing a role in design. By considering the pitch and its multiplicity of roles,

we can begin to think more deeply about how people, performances, and interactions play a role in design and inform the material directions of the product.

As part of this research, I aimed to understand how startups create technology in practice. In the CSCW community, we focus on very specific research and design processes like user research and ideating, sketching and prototyping, and testing. But I knew from the start of this research that startups have potentially very different practices. Early-stage startups try out a variety of different approaches, novel tools, and methods for designing and building interactive systems than we find in other tech companies—out of necessity. I found a surprising emphasis on pitching and explored its role in shaping the technologies created.

Startup pitches are widely considered as a means of presenting information to potential investors, but in practice, they are used in multiple ways. The pitching we examined in the accelerator context helped shape the concept of technology being created over the course of the accelerator and had a direct impact on the development of new interactive systems. As a tool, this could be considered in a similar way to sketching. Sketching is not just any drawing. It is a specific form used to ideate, convey concepts, and prototype. Pitching, like sketching, is a type of action—a design activity—practiced over time. The pitch is a flexible format for ideation and design, and considering it as such— rather than as a mere presentation format—opens up new possibilities for its use in developing technologies and startups on a practical level. Moreover, we should consider the ways in which the pitch plays a role in design and how it might be adapted and used in different ways to enable ideation, collaboration, and reflection. These too are legitimate

pathways to technology creation and can mutually inform and be informed by other design practices. The pitch has role in the design process, much the way material objects do.

7.5.1 Embedded Values

We must consider the ways in which values also play a part in all of this. In early-stage startups, ideas and identities are very malleable and are still being formed. Prior research has highlighted the importance of this period: "We believe that these early moments are particularly critical for identity formation processes because they are highly uncertain and emotionally charged. It is during these periods in which nascent entrepreneurs begin to construct stories that coherently address questions about who they are, why they are qualified, what they want to do, and why they think they will succeed" (Lounsbury & Glynn 2001, p. 550). If the pitch is a catalyst helping product teams imagine and understand their own values and how they relate to the world, the pitch itself plays a role in embedding values.

In each of the examples provided in this paper, we can see a shift in values. In the case of Obatech, the pitch acted as a tool for imagination, which allowed them to explore how the team's values might map onto the pharmaceutical chain. With Healint, the pitch acted as a collaboration tool within a community of practice. This ultimately led them to focus on the value for doctors and their patients. For Skimbl, the pitch acted as a reflection tool, which led Skimbl to value themselves and their identity as a team over their product. And in the case of MOLOME, the pitch acted as a performative tool to propel the energy that was representative of the core value of the product— the joy of their users. This re-centered their focus from creating value for brands to creating value for their users.

Underlying all of these value shifts, however, is the fact that the pitches that shaped these changes were also pitches that were, in fact, structured to be presented to investors. While they were shaped over the course of the accelerator in collaboration with a variety of others, they were also focused on presenting an idea worthy of investment. This raises multiple questions about the implications of the pitch as a practice. First, how might the value of investment— or appealing to investors—override other values of the team? What impact does this have on the product? How might the products or teams be impacted differently by developing and presenting pitches strategically meant for other purposes? Future research should take seriously the role that the pitch plays and how it infuses values into the technology products and startups themselves.

CHAPTER 8. DISCUSSION: CHANGING FLOWS OF INNOVATION

8.1 A Broader Theoretical View of Startup Innovation

This dissertation has presented different levels of analysis and theories to better understand the spread and impact of startup accelerators globally. I summarize them here and unpack what each of these perspectives contributes to the broader theoretical base. I then examine the common thread in these to discuss how accelerators not only influence the nature of innovation but also signal to investors and the startup community their legitimacy and therefore their worth for investing and acceptance and credibility in the community.

8.1.1 Replicating Silicon Valley in Accelerators

Chapter 4 presented Silicon Valley as a model ecosystem to encourage innovation, consisting of nine major components, and demonstrated the ways in which accelerators attempt to appropriate what they believe the ideal model to be. Silicon Valley emerged organically and has evolved over the years to become an innovation capital. Technology advancements and access, the regulatory environment, and the larger social environment all set the stage for its emergence. From there, the physical environment, capital investment, and the networking between various groups and influencers developed. And this shaped the startup culture, drew the people who are involved today, and impacted the practices they use. Given the widespread success of the Valley, it is no wonder accelerators and others try to appropriate it. But, this dissertation shows that trying to be like Silicon Valley turns out to be not only about innovation, but also surprisingly about legitimacy on the global stage.

I came into this research wondering how similar or different accelerators were globally and how they try to promote "innovation." Isomorphism as a general concept became a perspective to examine this once I saw how similar accelerators were to one another. Silicon Valley is looked to as an ideal. In reality, it is an imagined model, but many try to reverse engineer the structure and the elements of Silicon Valley anyway and use those elements in the hope of creating successful innovations. Isomorphism encapsulates this attempt to follow the leader(s) with the intent to be more innovative. But, nobody has an exact recipe to follow to create an innovation ecosystem. And homogeneous accelerators sprouting up all over the globe are also not necessarily reaching more innovative outcomes. Institutional isomorphism, per DiMaggio and Powell and others, highlights this fact.

This global homogeneity among accelerators is evidence of the isomorphic pressures shaping the field. Much of this has to do with the overwhelming amount of uncertainty in the technology startup landscape. Accelerators emulate Silicon Valley, and specifically emulate well-known accelerators like Y Combinator, not just to try to be innovative. They mimic them to also signal legitimacy to attract investors and gain credibility in the broader startup community. But isomorphic forces can additionally include coercive, top-down pressures. Accelerators must appeal to those with capital to invest and to those with influence in the close-knit global networks of the startup world. Investors expect to see certain standards anywhere they consider investing— like certain metrics, traction and growth standards, market size potential— but also certain things that are more legitimizing signals, like standard pitches and slide decks, common lingo and 'running Lean,' and a 'startup-like' name and logo. Likewise, normative pressures

percolating up from the bottom, from startups all over the globe, provide a loose

framework for increasing the apparent professionalization of the startup world. Guides like

Eric Ries's *Lean Startup* have emerged as a force globally, creating consensus around certain

practices and procedures for "doing innovation". The perspective of institutional

isomorphism complicates this notion of emulating for the sake of innovation. It shows that

often, if not the majority of the time, the elements of Silicon Valley that are appropriated are

appropriated to appear legitimate in the startup world, to do what is considered correct. As

a theoretical perspective, it highlights the complexity and tension of these dual goals at an

organizational level.

8.1.2 SV Startup Culture Globally

Chapter 5 shifts from a focus on the ecosystem level to the team level, looking at

some of the issues that arise for teams participating in the startup culture of accelerators.

Accelerators promote attitudes like accepting failure and taking risks and general behaviors

related to openness, networking, and collaboration. They espouse beliefs about hierarchy,

egalitarianism, and giving back. And they emphasize general values like honesty,

resourcefulness, and creativity. In the practices they use, they explicitly focus on cultivating

unruliness, confidence, extraversion, and empathy and force experimentation and accepting

imperfection.

Not surprisingly, the cultural qualities accelerators propagate pose challenges when

instantiated in different global contexts, with people from different national and work

culture backgrounds. Different cultural perspectives on things like risk-taking, hierarchy, or

being blunt are counter to some cultural values and practices where accelerators are

emerging outside of the US. What is surprising, though, is how those are still widely seen as valuable— something to learn, to use— not as a force being imposed on them.

The startup culture that accelerators spread is not without its problems and discontinuities, but from the teams' perspective— even those who face challenges or drop out— it is also seen as productive and enabling action. Teams suggest this is happening both by helping them innovate and develop their products and by instilling in them a "way of being" or an identity. Participating in an accelerator provides them with cultural capital, which helps them act the part and legitimizes their products and their company.

Cultural Capital

When I embarked upon this research project, I knew there would be cultural issues. I was expecting to try to understand what cultural qualities are unique to being an "innovator" and whether and how those qualities could be taught or learned and what conflicts might arise. I anticipated the conflicts I saw arise between SV startup culture and other regional, national, or professional cultures. What I did not anticipate was that despite the conflicts, teams really saw these cultural qualities as a toolkit for themselves. By learning the practices and culture of Silicon Valley, they developed cultural capital in the broader community. This only became apparent once I understood how the teams saw the value in accelerators and startup culture.

While the founders that I studied had a wide variety of backgrounds, it is important to note that they self-selected for participating in or working with an accelerator. Rather than seeing the cultural qualities imbued in the accelerator practices as coercive or something being forced upon them, they saw these as enabling them to fit in better in their chosen "profession" of being a startup founder. In some lights, and by observers and

outsiders, this may be seen as trying to be compliant to the dominant forces of the global startup scene and Silicon Valley. In many ways, that is very true, as is clear from the work of Bourdieu that I draw upon. But from the perspective of those I studied, learning the culture was a goal, self-selected, for identity purposes within this subculture.

We could take a step back and look at any other global sub-culture like the punk rock scene for an example[10]. No matter where you go globally, punks are similar, identifiable. And no matter how much punk culture is at odds with the national, ethnic, or religious background of an individual, there are still individuals who self-select and follow punk culture. Startup culture is very similar in this respect. Founders self-select . They identify with a certain sets of practices, be it in dressing startup logo t-shirts and hipster clothes, attending hacker events, using startup lingo, or other activities as described in Chapters 4 and 5. Of course we can go back to the argument of whether this is coerced compliance or genuine desire. Or we can highlight the role of major funding and capitalism. One might say, for instance that punk rock subculture is subversive, anti-establishment, without dominance. But startup founders very much think of themselves as being subversive, anti-establishment, rule-breakers, and disruptive as well. They are "the crazy ones, the misfits, the rebels, the troublemakers, the round pegs in the square holes" as Steve Jobs is credited as saying[11].

What I found was that these teams really saw these cultural attributes as valuable for them to learn. The practices and values were something that would help them strengthen their identity in a subculture in which they chose to participate. And the

---

[10] This example for comparison came from a conversation with Lily Irani early in this research.

[11] Jobs is credited by multiple sources as making these statement upon his return to Apple in 1997, launching its "Think Different" campaign.

practices and values were also a toolkit for them to learn for their chosen profession, much like how one might learn about the appropriate professional culture of medicine while becoming a nurse or about Japanese business culture to do international trade there. And in both these ways, it helped to legitimize them in the larger startup community. They learned a lot about how to think, act, and be like an "innovator."

What is much more difficult to say is which of these practices and values are truly needed for innovation. Just like the institutional isomorphism described earlier, both legitimacy and innovation are the goals. Many suggest that certain key qualities like accepting risk, embracing failure, having a flat hierarchy, etc., are crucial for innovation. There is a commonly-accepted notion, at least among accelerators and the early-stage startups that I got to know, that these are really important qualities for an innovator to have. But clearly they are also important to one's identity and legitimacy in the eyes of investors and the broader startup community. We have no evidence that one goal dominates—teams and accelerators both seek to be innovative and to be seen as legitimate. Other research that looks at innovation in other realms outside the technology startup space may be able to illuminate what leads to innovation across the board.

8.1.3 Lean, Accelerators, and Ritual Transformation

In Chapters 6 and 7, we move to a focus on practices, where we see the interplay of innovation and legitimacy at the practice level— shaping teams and their products. Chapter 6 presented Lean Startup as a broad set of practices that are meant to foster innovation and provide a structure for both product and business development simultaneously.

While there is no doubt that Lean helped teams in many ways, it was quite limiting in others. The rigid scientific approach led some teams down a wrong path, rather than

encouraging them to explore ideas. The focus on early adopters and lack of user research meant that some failed to understand the people they were designing for in their contexts. And the intensive focus on metrics prioritized growth over making good product decisions. What was unexpected was that while Lean's perceived role is to foster innovation, it is very powerful socially as well. As an innovation method, it shapes the product, but it also shapes the teams.

Ritual

Lean and its affiliated myths and symbols helped transform teams. The build-measure-learn structure helped make sense of a chaotic and unpredictable environment; it gave them rules, directed attention, and eased anxieties about what to do next. It helped structure their work and give them direction. Significant events like validation helped orient the teams. It instilled important values and gave them faith in themselves and their product.

Lean also transformed them as teams and as a larger cohort. Symbolically, participation in an accelerator can be seen as a rite of passage, wherein these early stage teams morph into acknowledged startups, with demo day ceremonially marking their debut into the community. The principles and practices of Lean could be and in fact are taught online and in weekend seminars and workshops. But they would never have the same ritual, transformative team impact as they do in the sequestered physical space of the accelerator. The principles and practices shape their identity, and again, signal legitimacy. Again, innovation and legitimacy appear on two different levels: at the accelerator level, as a rite of passage, and at the practice level, with Lean as a ritual.

From the beginning of this work , I expected the accelerator process to be a transformative one, but I wasn't sure how or in what ways that would happen. I started to understand the accelerator as a *liminal space*, and Lean as a powerful process beyond its innovation potential. Rituals are important in this work, because they say much about self-identity and promoting legitimacy. Both of these underlie an important thesis in the notion of ritual: the social solidarity thesis. Solidarity, at a very basic level, is about homogeneity. It is about creating cohesion and connection among individuals in a group. Victor Turner's work on ritual suggests that rituals integrate the internal and external aspects of the individual with their social world. Thus, there is a certain power relationship wherein accelerators and these ritual processes like Lean exert control, inducting their participants into the startup social world. For these participants, these processes enhance their identity and provide some level of fulfillment toward a goal of being part of that group internally. Externally, they signal legitimacy to the rest of that social world.

While participation in an accelerator certainly helps many founders gain legitimacy in the larger startup community, it is not the only way— or even a common way — of doing so. Only a small proportion of technology startup founders ever participate in an accelerator program. Most gain their startup education more organically or through other, less intensive, less immersive events like workshops and meetups. Many often transition slowly while working (often referred to as "wantrapreneurs") until they can transition to full-time focus on their startup. They also use a variety of other means of initial funding, like bootstrapping their projects themselves or borrowing from friends and family, pursuing VC or Angel money directly through their networks, or using crowdfunding tools. Thus, the role of accelerators in the processes of ritualization and rites of passage is less

organic than other paths to "becoming an innovator," but it is the most direct path for those

who are switching from another career in a non-technology area or are from a region where

it is difficult to pursue these other paths of learning and funding. But, even for these people

who participate in accelerators, this all highlights the question of whether accelerators help

them learn how to innovate. Or do they help them to become legitimate in the community?

It appears to be both— that they help them learn to innovate and become legitimate— but

there are certainly other paths to reach both of these goals too.

From a practical level, however, I expected Lean to truly be used as an innovation

practice, not a ritual. As explained in the early part of Chapter 6, yes, it does help

operationalize iterative innovation in certain ways, but there are also a lot of problems with

it. It helped transform teams and create their cohesive identities, but surprisingly, its

legitimizing potential is as powerful as its innovative potential and its role in team

transformation and identity.

Lean, more than other accelerator practices, appears to be something very

widespread, perhaps due to the fact that the book *Lean Startup* has bubbled up as a

normative element underlying the professionalization of startup work. That is to say, more

than anything else noted in this research, Lean has become something that is an important

signal among those in the startup community and beyond. Many teams in the startup world

more broadly say they "run Lean" even if they follow almost none of the practices and

processes described in the works of Eric Ries, Steve Blank, and others who have written

and spoken prolifically about Lean. But saying one "does Lean" and being able to use the

accompanying lingo is an important marker that, peripherally at least, signifies that one is

part of the startup community. The fact that many say they "run Lean," yet do not utilize

Lean practices and values denotes that Lean signifies that you are "in the club." If it truly is a beneficial practice to innovate, it seems counterintuitive that people would say they practice it, but then not actually practice it. Others from this research swear by the power of Lean in startup innovation. Depending on one's viewpoint, Lean is a powerful set of innovation practices, or a buzzword that signal you are an innovator, or both. Further research in Lean processes and their roles in institutional isomorphism would be helpful in understanding these phenomena. In particular, looking at Lean processes decoupled from the terms and signaling they provide would give a better view into this balance between their role in actually enabling innovation versus legitimacy.

8.1.4 The Pitch as a Transformative Practice

Finally, Chapter 7 presents a different perspective: pitching, a practice that intended to prove legitimacy and persuade investors to invest, in daily practice, becomes more of a tool for innovation. The startup pitch has spread globally in the format that it is today to manage impressions and enable quick assessment. But in practice at one field site, it became much more. As a boundary object, a way to communicate, between various groups, the pitch became a site of imagination for design and an important medium for open collaboration. And the act of pitching enabled teams to develop confidence and a sense of agency. Most surprisingly, the pitch fundamentally served as a design tool, having a direct impact on the product, not just the team. Lacking feedback from real end-users and other resources, teams used the pitch over time to explore ideas in an iterative way, to openly collaborate on them, and prototype and refine them. Thus the pitch is a practice that both serves to legitimize, but also to innovate.

Practice Theory

The three previously discussed theoretical constructs (institutional isomorphism, cultural capital, and rituals) offered relevant ways of talking about the data in the interviews and observations of this research. I came into this project seeking to understand innovation, and I very slowly began to understand the fundamental importance of legitimacy and identity, over the course of the research.

Practice theory, by contrast, is more straightforward. By focusing on practice at an empirical level, we can understand organizational phenomena as constantly changing through everyday action. This perspective helped me understand the day to day activities I was observing and participating in. I had always considered pitching to be intimately related to signaling legitimacy and to expressing identity. But over a period of watching and analyzing pitching practices, I understood what was really going on was very much a process of innovation. This is important to consider. Unlike other practices and values discussed above that are meant to aid in innovation, but also signal legitimacy, pitching has the starting point of being a signifier of legitimacy among the community, but particularly to funders. And surprisingly, it has legitimacy as its goal, but it also actually aids in innovation. Insofar as the pitch shapes the product, it also imbues values in it, and these values are shaped by a practice that is oriented to persuade potential funders to invest. In this way, the tensions between innovation on the one hand and legitimacy and identity on the other, have stronger repercussions because this makes them much more intimately connected and manifest in the actual product.

8.1.5 Innovation, Legitimacy, and Identity

This dissertation has drawn on a variety of theoretical perspectives to examine the phenomena of accelerators globally. My aim has been to draw together these perspectives — institutional isomorphism, cultural capital, ritual, and practice theory — to present a broader view. I came into this research with a focus on innovation. This very slowly, over the length of the research, transitioned to a focus on the balance and tension between innovation and legitimacy and identity. On the one hand, all these things founders and accelerators do to be innovative are also very much about signaling legitimacy. But signaling legitimacy is complex in itself. It is simultaneously trying to comply with and appeal to certain powers and legitimize one's own self-selected identity within the larger community. It is difficult to discern whether anyone is doing something for the sake of being more innovative or for the sake of being seen as legitimate. And if someone is appealing to legitimacy, it is difficult to discern whether they are doing so out of coercion from some controlling force, or if it is more to develop and solidify an identity in a community of which they desire to be a part.

It is largely irrelevant to the processes of innovation whether it is more for one or the other (legitimacy or identity). This research does, however have implications at multiple different levels that are relevant to innovation. In the following sections, I will discuss these implications at the practical level for "innovators" and at a broader theoretical level regarding the flow of innovation.

8.2 Implications for Innovators

The dual roles that accelerators and Lean in particular have on innovation and legitimacy raise a number of questions. At the individual and team level, are teams doing Lean because it is what they need to do to make an innovative product and business? Or are they doing to be part of the "innovator's club" and look like they are doing things correctly? At the accelerator level, are those who create accelerators emulating Y Combinator to foster innovative teams, or because it makes it look like they are running a good program? At the ecosystem level, are they emulating Silicon Valley because that's the best way to create an innovation ecosystem, even if they can only partially control elements? Or are they doing this because it will draw attention and hopefully funding? In the following sections I raise these and other questions and discuss practical implications at various levels of granularity.

8.2.1 Implications for Founders and Startups

For individuals and startups, the issues raised in this dissertation research can be difficult to control. In addition to actually being innovative, they must also gain legitimacy in the startup community, whether that is something they consciously strive for (and many do) or not. It is important to remember that founders participating in accelerators self-select, and as such may skew differently than entrepreneurs trying to innovate who choose not to participate in such a program of indoctrination. But even for these self-selecting participants, there are a host of implications for both personal growth and for their startups.

At the individual level, there are many implications regarding professionalization and what that means in a profession that is still nascent and constantly evolving. Since the

professionalization of startups has largely been rooted in Silicon Valley since the advent of the Internet, it has an overwhelming influence on what is acceptable and encouraged in the profession. This will likely dissipate over time as other ecosystems emerge and grow. But meanwhile, appearing legitimate to Silicon Valley networks is very important for garnering social and financial support.

Whether the professionalization of the startup industry is a positive thing globally or not, it is happening, and legitimacy in the eyes of Silicon Valley is important. For founders, this raises many questions about whether going through the motions of appearing legitimate is the best course of action. Many, of course, aim to appear legitimate as they self-select as part of their identity in the community. But others may well struggle with the conflicts it raises for them, particularly in regard to Silicon Valley culture. There are many well-known culture conflicts even in Silicon Valley itself, notable among women and minorities not feeling part of the (mostly white, "boys") club.

While there is no easy solution to changing the culture, the implications for individuals who want to change "the club" are to spark conversations about this need for legitimacy in the community and what is really important for innovation. Conversations would center on the goals of the community versus artifice of legitimacy. For participants in accelerators in particular, it is clear that there are limitations to some of the practices that are done in accelerators. This might be a good time to start reflecting on them and iterating to improve them.

For startups more broadly, this research raises questions as to whether accelerators are the right choice and if so, which ones? While accelerators have emerged over the last several years to take on a similar form to appear as legitimate entities, they also have

developed their own identities, both by being rooted in particular location globally, but also by choice. There are accelerators that specialize in particular markets, focusing on certain regions or demographics, Others that focus on specific types of products, like mobile-only or healthcare-oriented products. And others that aim to work with specific participants (like accelerators). Some mimic elements of Silicon Valley, but they also create hybrid approaches and have different specialties. Because there are choices, startups need to understand the differences and make informed choices.

In addition, it is important to consider various ecosystems. Some entrepreneurs are relocating to a different country for regulatory, funding, and hiring purposes. Beyond that, this all raises questions as to whether Silicon Valley style venture capital is even really necessary. Removing the need to appear legitimate for the purposes of funding removes many other hurdles and obligations, though not all. For startups and founders, these are very much things to consider. Future work and research in the area of crowdfunding and other funding methods will be tremendously important to understanding the support and development of startup innovation globally. It also has the potential of decoupling legitimacy as being judged only by the eyes of Silicon Valley.

8.2.2 Implications for Accelerators

Accelerators have a unique role to foster both startups and ecosystems from the ground up, from sourcing and educating entrepreneurs, and involving regulators, influencers, experienced practitioners, and corporations to participate in the ecosystem. The implications of this research are, on the one hand, how to better foster innovative startups and, on the other, how to develop stronger ecosystems.

157

In thinking about fostering startups, it is really important to reflect on what actually helps teams innovate. Do the entrepreneurs that are in the accelerators have tacit knowledge and the necessary skill set for innovating? If not, can a curriculum be designed locally or tailored from the model of Silicon Valley? And should the skill sets be evaluated against Silicon Valley standards? There are lots of opportunities to explore other ways to "do innovation."

One way to do innovation that I have looked at and discussed with some of the participants of this research is combining Lean and "design thinking." Design thinking and Lean have both connections and potential conflicts. The two often seem at odds epistemologically -- in methods, data, and approaches. One is normative or "scientific," the other interpretive. One is metrics-driven, the other design-driven. Lean's cycle focuses on build-measure-learn (Ries 2011), while design thinking's cycle is: define, research, ideate, prototype, choose, implement, and learn (Simon 1996). And their focus on and treatment of the user are often very different.

But there are synergies to be found in the two as well, and in particular, addressing the shortcomings of Lean's focus on metrics. Design thinking allows more consideration of the end users and their contexts and needs. It allows patterns of findings about users and their needs to emerge first, before pursuing a design direction. And, secondly, it actively focuses on the role of empathy and the dynamic context of the problem.

Design thinking is rooted in combining the context of the problem and empathy—in many ways, not dissimilar from what Customer Development preaches. However, the philosophy and the approach are grounded in data. This grounded-theory approach provides a structure for patterns to emerge; it allows innovators to arrive at conclusions

based on observations early. Thus it sets the stage for alternatives to be examined and experimentation and metrics to be used in a valuable way. In a complex environment, this allows experiments to be more focused on producing understanding, which Anderson et al. suggest is key: "the system is now too complex for a prior [sic] comprehension and thus the product launch is itself an experiment about order or arbiter of order" (2013).

Combining elements of Lean and design thinking is not just appropriate for accelerators; others have noted the potential synergies of these approaches (Müller and Thoring 2012). Lean focuses more closely on business value while design thinking focuses more on developing the right product for the end user. Together, they could be very useful in terms of thinking about how to provide value for both stakeholders and users at the same time.

There are many other perspectives on what makes for good innovation out there. For accelerators, it is important to consider other practices that are not currently mainstream in startup world. This research hopefully will spark conversation on what actually helps teams innovate that moves beyond funding, network connections, and the appearance of legitimacy.

At the same time accelerators are fostering startups, they are also fostering the ecosystem. As microcosms of the larger ecosystems in which they are situated, they have a disproportionate influence for the larger ecosystems in which they are embedded. The economic impact on the ecosystem can be seen in the venture capital cycle, where investors exert pressure to deploy and can rely on a steady and predictable number of companies in the pipeline. Socially, they bring the ecosystem together in a more solidified way by combining and connecting different networks and providing activities and events where

both bridging (loose connections) and bonding (tight connections) capital are formed. At the larger level, this creates a shared experience and identity within the larger ecosystem and fosters a network of trust. And, ultimately, this creates a stronger cultural identity within the ecosystem, also propagating norms. Accelerators have the power to shape the norms to a large extent, and should be reflective and introspective about what they are doing and why.

This research also offers a structure to evaluate the nine major elements of ecosystems in the model of Silicon Valley (Figure 8.1). At a basic level, it is key for
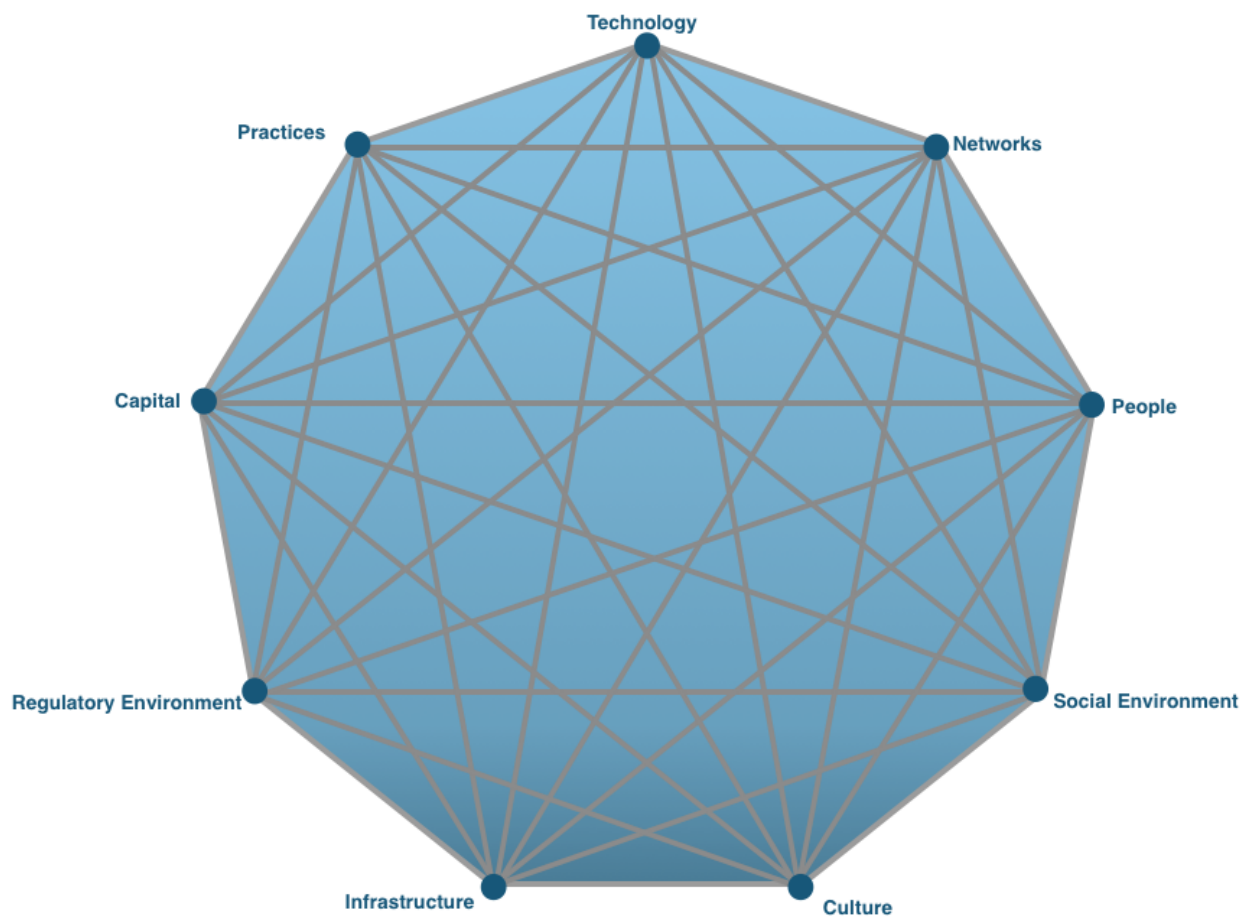

Figure 8.1: Silicon Valley Ecosystem Components

accelerators to understand which ones are lacking, and how they can recognize and play

into the strengths and weaknesses of the ecosystem, particularly through specialization or

diversification. But beyond that, accelerators should really reflect on whether it is, in fact,

important to try to mimic or control for all of these elements in their programs, and how

they can tailor them appropriately.

8.2.3 Implications for Ecosystems

Finally, at the ecosystem level, this research provides a structure and common

language for stakeholders in ecosystems and presents ways to think about the Silicon Valley

model and whether it can — or should— be appropriated in different contexts. For those in

other ecosystems, there is overwhelming pressure to try to be similar to Silicon Valley —

the way things are built, to whom they recruit into partnerships and beyond. But, for one,

there's a lot of conjecture as to how and why Silicon Valley is the way it is. It's really an

idealized model that is being emulated— not the real Silicon Valley. And secondly, even if

the model is accurate, it is an incredibly complex system that emerged organically, so it is

difficult to really create an artificial version that would have the same outcome. Not all nine

aspects can be controlled. For those working to build ecosystems, one implication is to

consider: which of these elements are really key and which are controllable? It's important

to consider both how to resist the pressure simply to appropriate practices or how to

decide what aspects of the Silicon Valley "ideal" are suitable for the local ecosystem.

The larger question is: Is it even the right model to be idealizing? Despite all the

complications, ecosystems do still try to emulate the Silicon Valley model to a large extent,

meaning that ecosystems are largely going to be very similar in structure and with similar

sorts of partners involved, although this varies from place to place. In Singapore, for

instance, heavy government involvement in the ecosystem has been a boon to growth.

Singapore went from $43 million to $1billion in investments in startups, mostly due to the

government's effort to foster an ecosystem. This is quite different from Silicon Valley's

approach which centers on private equity. In Argentina, however, there has historically

been a lack of government involvement in the ecosystem, although this is changing.

Ecosystems are learning from one another, not just Silicon Valley. Alas, whose job is it to

build an ecosystem (government or private, or is it a collaboration/partnership, etc.) and

how a thriving ecosystem grows are still questions for future research to consider.

8.3 Shaping the Flow of Innovation

There are clearly many broader themes emerging from these various levels of

granularity and diverse approaches. One is the balance and flow of global and local forces

and influences. Another is the interplay between innovation and legitimacy. And there are

lots of underlying themes of identity, agency, and influence. Each of these chapters has

discussed the interplay of these forces to some extent. My aim here is to draw them

together and explain how accelerators are impacting the flow of innovation globally in a

fundamental way.

The process of innovation as it has been conceived historically consists of three

general, yet overlapping phases: invention -> innovation (use) -> diffusion (King et al.

1994). Others have expanded this process to include more specific elements, such as

Rogers's breakdown of the innovation process: needs and problems -> research ->

development -> commercialization -> diffusion and adoption -> consequences (Rogers

2003). There are many approaches from a variety of schools of thought on the flows and

influences of innovation that critique such a linear approach and present other approaches, but diffusion is always considered to occur late in the process.

I argue that the model of innovation being spread in accelerators is one that is now shifting that flow, making it looped or even backwards. And by way of their global reach, accelerators are fundamentally changing the flow of innovation from one that begins with an invention or product to one that begins with a focus on global diffusion.

8.3.1 A Focus on Diffusion

In the first dotcom boom in the late 1990s, it was very expensive to build a software product. Startups had to have an initial product or an idea that seemed really good, then they would get investment a priori to build it or to continue building it, then they would build it and then see how well it diffused. Today, it is cheap to build software, so you can easily start to develop something. But now, in order to get funding, you have to show how it would scale, not just guess how it would. Metrics and validation are key. This focus is oriented by the Lean Startup model and Customer Development practices, which rely on several concepts that come from Rogers' work on diffusion of innovations (DOI).

In Lean, an MVP need not be a functioning product. It can, and often is, still in the idea phase. As Steve Blank, the creator of Customer Development says: "You're selling the vision." The idea or experiment is tested with "early adopters," a phrase coined in Rogers' DOI work. Validation of the idea relies on tracking metrics and creating a "funnel" of potential customers. The goal is to exhibit the ability to "Cross the chasm," i.e. move from early adopters to the mainstream market— which is based on the graphical depiction of innovation diffusion over time in Rogers's work.

This is not the same as going out and researching a market to develop a product. The focus, rather, is on evaluating whether the product will scale before actually fully developing it. The process moves from finding potential customers for an idea, to refining that idea based on how they may use the product, to then developing the actual product. The potential for diffusion precedes the innovation.

This flow was not possible until recent years. First, the global, networked platform of the internet has enabled software and digital products to be globally scalable. Secondly, recent technological advances underlie the ability to measure global scalability. One can now test an idea and analyze data in ways previously not possible. Analytics tools like KISSMetrics, Mixpanel, and Google Analytics enable the development of measures to determine demand and scalability. Advertising platforms like Google AdWords and social networking sites like Facebook provide methods to experiment. And Lean and Customer Development provide the structure to follow. Teams can start with a premise or an assumption of a problem and create advertisements on Facebook or Google Adwords to target potential customers. They can then measure their interest directly based off of clicks and conversion rates and other metrics, all before committing a single line of code in the product.

8.3.2 The Role of Accelerators

The concept of an accelerator, its canonical literature, and adoption of Lean methods and principles are all products of Silicon Valley. The terminologies and cultural views of this origin are imbued into the structures, practices, and approaches of accelerators— and this includes adoption of the venture capitalist business model and its underlying goals and objectives. While the accelerator provides value to the innovation teams by injecting

164

economic capital, the accelerator also relies on (and expects) a return of capital via future

liquidity event, commonly known as an "exit." This enables the accelerator to fund its future

operations. An accelerator is a hit business; it makes many small bets with the goal of

having at least one team among many become successful. Therefore, by design, the goal of

the accelerator operators is to foster an environment that produces large capital gains

within a short time-frame. In practice, this translates into a culture within accelerators that

promotes creation of globally-focused, scalable, and profitable business. It privileges global

scalability (diffusion) over what the actual technology is or how it is used.

The teams that join accelerators are trying to create a product and create a business

simultaneously. They are focused on innovating, but also on building legitimacy and

showing that they are scalable. Their survival relies on funding, and funding is rooted in

both of these. They have to show investors they are building something scalable and have

metrics to prove it. They also have to appear legitimate, participating in the culture and

practices that are part a startup world. The incentives for mass diffusion shape the

direction of the product more than developing an innovative or useful product do.

Placing the focus *a priori* and continuously on diffusion fundamentally shapes the

types of innovations that are made. Namely, it shapes the focus toward designing

technologies that are easily adopted, and that would be adopted broadly. This may

influence focusing on broader problems that effect many people. It may also promote the

development of products with immediate impact, which can then be built upon,

contributing to cumulative innovation (Murray & O'Mahony 2007). But prioritizing for

potential diffusion also limits the possibility for "disruptive innovation," and in focusing on

local problems and utilizing local knowledge.

While most accelerators tout a focus on "disruptive innovation," the structure they provide is counter to promoting "disruption" in a number of ways. Lean is focused on incremental improvements, not bold changes and ideas. Customer Development emphasizes testing and refinement with early adopters, not those that would be "disrupted" typically. And ideas get funded based on metrics and a model that proves rapid scalability. And disruptive technologies are, by nature, not rapidly scalable. Because they are disrupting something that was stable, it takes time for them to diffuse.

Many founders come in focusing on a specific problem or user base. But, in the accelerator world, the attitude is: "Successful entrepreneurship policies should acknowledge that the most successful startup and teams are 'born global'" (Mauro 2014). Underlying this are some implicit assumptions that value created via global impact is greater than local impact. And this is fundamentally at odds with where the greatest potential impact for accelerators lies: the decentralization of technology production. Rather than functioning as worldwide scouts for the next big global, scalable technology product or pathways through which to take an existing technology to meet new markets, accelerators could have a much larger impact in creating value for different user groups— smaller, marginalized, or otherwise neglected groups, often where the startups are located. And it can do that by leveraging what it already has: teams with local knowledge from all over the globe. This is the opportunity missed.

8.4 Future Directions

Paul Graham of Y Combinator has equated the rise of startups as a significant revolutionary force on the scale of agriculture or industrialization. But unlike other

revolutions, he argues, the startup revolution does not need local producers. Anyone can create software, Graham says, but it's most likely going to come from an ecosystem like Silicon Valley (Stross 2012, p. 237). But most founders' ideas are drawn from their experiences or something in their personal lives. A major criticism of Silicon Valley startups is that they often design for themselves: middle- to upper-middle class, educated, fairly affluent. They are not particularly oriented to global scalability either; they just have the early adopters to show enough growth to justify investment. Not only are women and minorities underrepresented (Whitney & Ames 2014), there is an "echo chamber" that creates a closed system in terms of what is considered novel, useful, or innovative. But rather than technology being created by Silicon Valley startups for the rest of the world, the accelerator model has the potential to help foster entrepreneurs all over the globe.

One of the major potential benefits of the global expansion of accelerators is that they can enable local knowledge to play a role in innovation, which Brown and Duguid (2002) have argued for. At a local level, entrepreneurs have a greater understanding of the context or problem space in which they are creating a product. Encouraging entrepreneurs in different regions to address problems that are local or regional first, rather than globally scalable has huge implications for the types of startup products that are created and the user groups that are focused on, particularly smaller, marginalized, or otherwise neglected groups. This does not mean they won't necessarily become scalable. Innovation need not be top-down. There are many examples of successful reverse- or resource-scarce innovations that have become widely adopted beyond their original focus. However, this requires a system change in the way innovation is measured and funded in accelerators. It requires different metrics that account for sustainability and long term benefits to society, such as an

impact factor and dynamic needs/solutions evaluations. Future research should look more closely at measures of failure and success, and also more closely at different types of accelerators— particularly those which are focused on social innovation. Which teams and products succeed and why?

Rather than functioning as worldwide scouts for the next big global, scalable technology product or pathways through which to take an existing technology to meet new markets, accelerators could play a role in enabling access to the methods, mentorship, education, networking, and funding that are needed in local or regional markets, where tailored technological solutions to problems are unlikely to come from a large multinational or other source. This could play a major role in developing regions in particular, although many question whether development should be a goal at all, as there are many criticism of development-through-entrepreneurship models (Kuriyan, Ray, & Toyama 2008). That's not to say this is necessarily a matter of control for accelerators. While there is considerable opportunity to focus on regional and local considerations, many founders globally want to "make it" in Silicon Valley and focus only on global, scalable startup ideas. The capacity to aspire (Appadurai 2004) is an important entrepreneurial attribute, and one that is noted as particularly important in developing regions. Entrepreneurs globally have high ambitions that inform their goals and direct their actions.

Lots of people talk about disruptive innovation and evolution versus revolution in the innovative product. The bigger debate about evolution versus revolution appears to be in the practices, the spreading of this model around the world. The explosion of accelerators over the last decade has been revolutionary in that it brought a little bit of Silicon Valley to places all over, for better or worse. But each of these places is now slowly

evolving that model differently, as we have seen with these two field sites. This is all still very new. The larger impact remains to be seen.

REFERENCES

1. Abrahamson, E. (1991). Managerial Fads and Fashions: The Diffusion and Rejection of Innovations. *Academy of Management Review*, *16*(3), 586-612.

2. Adner, R., & Kapoor, R. (2010). Value Creation in Innovation Ecosystems: How the Structure of Technological Interdependence Affects Firm Performance in New Technology Generations. *Stratgic Management Journal*, *31*(3), 306-333.

3. Amorosi, F. (2013). *Startups En Argentina: Desafíos Del Ecosistema Emprendedor* . Thesis. Buenos Aires, Argentina: Universidad Nacional del Sur.

4. Anderson, K., Salvador, T., & Barnett, B. (2013). Models in Motion: Ethnography Moves from Complicatedness to Complex Systems. *Proceedings of EPIC 2012*, 232-249.

5. Ante, S. E. (2008). *Creative Capital: Georges Doriot and the Birth of Venture Capital.* Boston: Harvard Business Press.

6. Appadurai, A. (2004). The Capacity to Aspire: Culture and the Terms of Recognition. In *Culture and Public Action.* V. Rao & M. Walton (Eds.), Stanford, CA: Stanford University Press, 59-84.

7. Armour, J., & Cumming, D. (2006). The Legislative Road to Silicon Valley. *Oxford Economic Papers.*

8. Aspen Network of Development Entrepreneurs. (2013). *Entrepreneurial Ecosystem Diagnostic Toolkit.*

9. Benslimane, D., Dustdar, S., & Sheth, A. P. (2008). Services Mashups: The New Generation of Web Applications. *IEEE Internet Computing*, *12*(5), 13-15.

10. Blank, S. (2013). *The Four Steps to the Epiphany.* Pescadero, CA: K&S Ranch.

11. Blank, S. G., & Dorf, B. (2012). *The Startup Owner's Manual : The Step-by-Step Guide for Building a Great Company: Vol. 1.* Pescadero, CA: K&S Ranch.

12. Blasi, J. R., Kruse, D., & Bernstein, A. (2003). *In the Company of Owners: The Truth About Stock Options (and Why Every Employee Should Have Them).* New York: Basic Books.

13. Borneman, J., & Hammoudi, A. (2009). *Being There: The Fieldwork Encounter and the Making of Truth.* Berkeley, CA: University of California Press.

14. Bourdieu. (1986). The Forms of Capital. In *Handbook of Theory & Research for the Sociology of Education.* Richardson (Ed.), New York: Greenwood, 241-258.

15. Brown, J. S. (2012). The Evolution of Innovation. *Research-Technology Management*, *55*(5), 18-23.

16. Brown, J. S., & Duguid, P. (1991). Organizational Learning and Communities-of-practice: Toward a Unified View of Working, Learning, and Innovation. *Organization Science*, *2*(1), 40-57.

17. Brown, J. S., & Duguid, P. (2002). Local Knowledge: Innovation in the Networked Age. *Management Learning*, *33*(4), 427-437.

18. Bundy, W. M. (2002). *Innovation, Creativity, and Discovery in Modern Organizations.* Westport, CT: Quorum Books.

19. Carayannis, E. G., & Campbell, D. F. (2009). 'Mode 3'and'Quadruple Helix': Toward a 21st Century Fractal Innovation Ecosystem. *International Journal of Technology Management*, *46*(3), 201-234.

20. Castells, M., & Hall, P. (1994). *Technopoles of the World: The Making of 21st Century Industrial Complexes.* New York: Routledge.

21. Castilla, E. J., Hwang, H., Granovetter, E., & Granovetter, M. (2000). Social Networks in Silicon Valley. In *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship.* C. Lee, W. Miller, M. Gong Hancock, & H. Rowen (Eds.), Stanford, CA: Stanford University Press, 218-247.

22. Cerf, V. G. (2014). Does Innovation Create or Destroy Jobs? *Communications of the ACM*, *57*(12), 7.

23. Cervantes, R. (2013). *Innovation Infrastructures to Transform the Mexican Internet Industry: The Case of the Startup Community.* Thesis. University of California, Irvine.

24. Chan, K. F., & Lau, T. (2005). Assessing Technology Incubator Programs in the Science Park: The Good, the Bad and the Ugly. *Technovation*, *25*(10), 1215-1228.

25. Charmaz, K., & Mitchell, R. G. (2001). Grounded Theory in Ethnography. In *Handbook of Ethnography.* A. Coffey, S. Delamont, J. Lofland, & P. Atkinson (Eds.), London, UK: Sage, 160-175.

26. Choy, T. K. (2011). *Ecologies of Comparison: An Ethnography of Endangerment in Hong Kong.* Durham, NC: Duke University Press.

27. Christensen, C. (2013). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail.* Cambridge, MA: Harvard Business Review Press.

28. Christiansen, J. (2015). *Seed DB.* www.seed-db.com. Retrieved 30 Jan 2015.

29. Clark, C. (2008). The Impact of Entrepreneurs' Oral 'pitch' Presentation Skills on Business Angels' Initial Screening Investment Decisions. *Venture Capital*, *10*(3), 257-279.

30. Cohen, S. (2013). What Do Accelerators Do? Insights From Incubators and Angels. *Innovations*, *8*(3-4), 19-25.

31. Cooper, B., & Vlaskovits, P. (2010). *The Entrepreneur's Guide to Customer Development : A "Cheat Sheet" to the Four Steps to the Epiphany.* Brant Cooper and Patrick Vlaskovits.

32. Croll, A., & Yoskovitz, B. (2013). *Lean Analytics: Use Data to Build a Better Startup Faster.* Sebastopol, CA: O'Reilly Media, Inc.

33. Da Col, G., & Graeber, D. (2011). Foreword: The Return of Ethnographic Theory. *HAU: Journal of Ethnographic Theory*, *1*(1).

34. Damanpour, F., & Gopalakrishnan, S. (2001). The Dynamics of the Adoption of Product and Process Innovations in Organizations. *Journal of Management Studies*, *38*(1), 45-65.

35. DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, *48*(2), 147-160.

36. Eisenmann, T. R., Ries, E., & Dillard, S. (2012). Hypothesis-driven Entrepreneurship: The Lean Startup. *Harvard Business School Entrepreneurial Management Case*, (812-095).

37. Elsbach, K. D., & Kramer, R. M. (2003). Assessing Creativity in Hollywood Pitch Meetings: Evidence for a Dual-process Model of Creativity Judgments. *Academy of Management Journal*, *46*(3), 283-301.

38. Engel, J. S., & del Palacio, I. (2009). Global Networks of Clusters of Innovation: Accelerating the Innovation Process. *Business Horizons*, *52*(5), 493-503.

39. Engel, J. S., & Forster, F. (2014). USA: Silicon Valley, the Archetypal Cluster of Innovation. In *Global Clusters of Innovation: Entrepreneurial Engines of Economic*

Growth Around the World. J. S. Englel (Ed.), Northampton, MA: Edward Elgar Publishing, 41.

40. Fal, M. (2013). Accelerating Entrepreneurship in Africa. *Innovations*, *8*(3-4), 149-168.

41. Feld, B. (2012). *Startup Communities: Building An Entrepreneurial Ecosystem in Your City.* John Wiley & Sons.

42. Feld, B., & Mendelson, J. (2011). *Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist.* Hoboken, NJ: John Wiley & Sons.

43. Feldman, M. S., & Orlikowski, W. J. (2011). Theorizing Practice and Practicing Theory. *Organization Science*, *22*(5), 1240-1253.

44. Ferenstein, G. (2014). Eric Schmidt Confirms It: He Sealed the Deal with Google at Burning Man. *VentureBeat,* 25 Sep 2014.

45. Feurstein, K., Hesmer, A., Hribernik, K. A., Thoben, K. D., & Schumacher, J. (2008). Living Labs: A New Development Strategy. *European Living Labs-A New Approach for Human Centric Regional Innovation*, 1-14.

46. Florida, R. L. (2002). *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life.* New York: Basic Books.

47. De Fontenay, C., & Carmel, E. (2001). Israel's Silicon Wadi: The Forces Behind Cluster Formation. *SIEPR Policy Paper*, *40*(00).

48. Geertz, C. (1973). *The Interpretation of Cultures: Selected Essays.* New York: Basic books.

49. Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration.* Univ of California Press.

50. Graham, P. (2014). *Frighteningly Ambitious Startup Ideas.* http://www.paulgraham.com/ambitious.html. Retrieved 12 Jun 2014.

51. Harris, J. G., & Junglas, I. (2013). Decoding the Contradictory Culture of Silicon Valley. *Accenture Report.*

52. Highsmith, J., & Cockburn, A. (2001). Agile Software Development: The Business of Innovation. *Computer*, *34*(9), 120-127.

53. Holland, D., Lachicotte, W., Skinner, D., & Cain, C. (1998). *Agency and Identity in Cultural Worlds.* Cambridge, MA: Harvard University Press.

54. Holweg, M. (2007). The Genealogy of Lean Production. *Journal of Operations Management*, *25*(2), 420-437.

55. Horton, J. J. (2014). *A Price Theory of Silicon Valley.* Working Paper.

56. Huntsman, B., & Hoban Jr, J. P. (1980). Investment in New Enterprise: Some Empirical Observations on Risk, Return, and Market Structure. *Financial Management*, 44-51.

57. Hwang, V. W., & Horowitt, G. (2012). *The Rainforest : The Secret to Building the Next Silicon Valley.* Los Altos Hills, CA: Regenwald.

58. Ingold, T. (2014). That's Enough About Ethnography!. *HAU: Journal of Ethnographic Theory*, *4*(1), 383-395.

59. INSEAD, & WIPO. (2012). *The Global Innovation Index 2012: Strong Innovation Linkages for Global Growth.* Fountainebleau, France: INSEAD.

60. Isaacson, W. (2011). *Steve Jobs.* New York: Simon & Schuster.

61. Jacobson, I., & Seidewitz, E. (2014). A New Software Engineering. *Communications of the ACM*, *57*(12), 49-54.

62. Johnson, S. (2014). H-1B Visa Cap Reached After Just Five Days As Valley Executives Lobby to Expand the Program. *San Jose Mercury News,* 7 Apr 2014.

63. Kaplan, S. N., & Lerner, J. (2015). *Venture Capital Data: Opportunities and Challenges.* Working Paper.

64. Kempner, R. (2013). Incubators Are Popping Up Like Wildflowers but Do They Actually Work? *Innovations*, *8*(3-4), 3-6.

65. Kenney, M. (2000). *Understanding Silicon Valley: The Anatomy of An Entrepreneurial Region.* Stanford, CA: Stanford University Press.

66. Kenney, M., & Von Burg, U. (1999). Technology, Entrepreneurship and Path Dependence: Industrial Clustering in Silicon Valley and Route 128. *Industrial and Corporate Change*, *8*(1), 67-103.

67. King, J. L., Gurbaxani, V., Kraemer, K. L., McFarlan, F. W., Raman, K. S., & Yap, C. S. (1994). Institutional Factors in Information Technology Innovation. *Information Systems Research*, *5*(2), 139-169.

68. Koberg, C. S., Detienne, D. R., & Heppard, K. A. (2003). An Empirical Test of Environmental, Organizational, and Process Factors Affecting Incremental and Radical Innovation. *The Journal of High Technology Management Research*, *14*(1), 21-45.

69. Kramer, B., & Patrick, M. (2014). *Silicon Valley Venture Capital Survey, Fourth Quarter 2014.* Fenwick.

70. Kuriyan, R., Ray, I., & Toyama, K. (2008). Information and Communication Technologies for Development: The Bottom of the Pyramid Model in Practice. *The Information Society*, *24*(2), 93–104.

71. Kushida, K. E., Murray, J., & Zysman, J. (2012). The Gathering Storm: Analyzing the Cloud Computing Ecosystem and Implications for Public Policy. *Communications & Strategies*, (85), 63-85.

72. Lacy, S. (2008). *Once You're Lucky, Twice You're Good: The Rebirth of Silicon Valley and the Rise of Web 2.0.* New York: Penguin Group.

73. Ladner, S. (2014). *Practical Ethnography: A Guide to Doing Ethnography in the Private Sector.* Walnut Creek, CA: Left Coast Press.

74. Lall, S., Bowles, L., & Baird, R. (2013). Bridging the Pioneer Gap: The Role of Accelerators in Launching High-Impact Enterprises. *Innovations*, *8*(3-4), 105-137.

75. Lerner, J., & Tag, J. (2013). Institutions and Venture Capital. *Industrial and Corporate Change*, *22*(1), 153-182.

76. Lesser, E. L. (2000). *Knowledge and Social Capital: Foundations and Applications.* Woburn, MA: Butterworth-Heinemann.

77. Levy, S. (2001). *Hackers: Heroes of the Computer Revolution.* New York: Penguin Books.

78. Levy, S. (2011). *In the Plex : How Google Thinks, Works, and Shapes Our Lives.* New York: Simon & Schuster.

79. Lécuyer, C. (2006). *Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970.* Cambridge, MA: MIT Press.

80. Lojek, B. (2007). *History of Semiconductor Engineering.* New York: Springer.

81. Lounsbury, M., & Glynn, M. A. (2001). Cultural Entrepreneurship: Stories, Legitimacy, and the Acquisition of Resources. *Strategic Management Journal*, *22*(6-7), 545-564.

82. Mahajan R. (2014). *Why Silicon Valley Is NOT the Right Model for India's Tech Sector: Ethics, Politics, and Development Today.* Presented at University of California, Irvine, 22 Apr 2014.

83. Mahtani, S., & Holmes, S. (2011). Wozniak: Apple Couldn't Emerge in Singapore. *The Wall Street Journal,* 15 Dec 2011.

84. Marcus, G. E. (1995). Ethnography In/of the World System: The Emergence of Multi-sited Ethnography. *Annual Review of Anthropology*, *24*, 95-117.

85. Markoff, J. (2005). *What the Dormouse Said: How the Sixties Counterculture Shaped the Personal ComputerIndustry.* New York: Penguin Group.

86. Mason, H. (2014). *Guilds for Geeks: Describing Business Acceleration Using Grounded Theory Methods.* Thesis. St. John University, York, UK.

87. Mauro, R. (2013). *The Y-Combinator Model: High-potential Accelerators and Innovation Ecosystems.* Working Paper.

88. Maurya, A. (2012). *Running Lean : Iterate From Plan A to a Plan That Works.* Sebastopol, CA: O'Reilly.

89. Maxwell, A., & Lévesque, M. (2010). Entrepreneurs' Trustworthiness: A Critical Ingredient for Attracting Investment. *Frontiers of Entrepreneurship Research*, *30*(2), 1-16.

90. McGranahan, C. (2014). What Is Ethnography? Teaching Ethnographic Sensibilities Without Fieldwork. *Teaching Anthropology*, *4*, 23-36.

91. Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure As Myth and Ceremony. *American Journal of Sociology*, *83*(2), 340-363.

92. Miller, P. & Bound, K. (2011). *The Startup Factories.* London, UK: NESTA.

93. Moretti, E. (2004). Human Capital Externalities in Cities. *Handbook of Regional and Urban Economics*, *4*, 2243-2291.

94. Müller, R. M. & Thoring, K. (2012). Design Thinking vs. Lean Startup: A comparison of two user-driven innovation strategies. *2012 International Design Management Research Conference.*

95. Mukerji C. (2014). *Tacit Knowledge and Imagination.* Presented at University of California, Irvine, 28 Feb 2014.

96. Murray, F., & O'Mahony, S. (2007). Exploring the Foundations of Cumulative Innovation: Implications for Organization Science. *Organization Science*, *18*(6), 1006-1021.

97. Nader, L. (1972). Up the Anthropologist: Perspectives Gained From Studying Up. In *Reinventing Anthropology.* D. Hymes (Ed.), New York: Pantheon, 284-311.

98. Nader, L. (2011). Ethnography As Theory. *HAU: Journal of Ethnographic Theory*, *1*(1), 211-219.

99. Nager, M., Nelsen, C., & Nouyrigat, F. (2011). *Startup Weekend: How to Take a Company From Concept to Creation in 54 Hours.* Hoboken, NJ: John Wiley & Sons.

100. Nagy, B. G., Pollack, J. M., Rutherford, M. W., & Lohrke, F. T. (2012). The Influence of Entrepreneurs' Credentials and Impression Management Behaviors on Perceptions of New Venture Legitimacy. *Entrepreneurship Theory and Practice*, *36*(5), 941-965.

101. Newcomer, E. (2015). Venture Funding of U.S. Startups Last Year Was Most Since 2000. *Bloomberg Business,* 15 Jan 2015.

102. Nicholas, K. (2011). The Push and Pull of Innovation: A Start-up Case Study. *Journal of Case Research in Business and Economics*, *4*, 1-12.

103. Nivi, B., & Ravikant, N. (2008). *Pitching Hacks : How to Pitch Startups to Investors.* San Francisco, CA: Venture Hacks Inc.

104. Norman, D. A., & Verganti, R. (2012). Incremental and Radical Innovation: Design Research Vs. Technology and Meaning Change. *Design Issues*, *30*(1), 78-96.

105. Olson, G. M., & Olson, J. S. (2000). Distance Matters. *Human-computer Interaction*, *15*(2), 139-178.

106. Orlikowski, W. J., & Barley, S. R. (2001). Technology and Institutions: What Can Research on Information Technology and Research on Organizations Learn From Each Other? *MIS Quarterly*, *25*(2), 145-165.

107. Ortner, S. B. (2006). *Anthropology and Social Theory: Culture, Power, and the Acting Subject.* Durham, NC: Duke University Press.

108. Ortner, S. B. (2010). Access: Reflections on Studying Up in Hollywood. *Ethnography*, *11*(2), 211-233.

109. Osterwalder, A., Pigneur, Y., & Clark, T. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers.* Hoboken, NJ: John Wiley & Sons.

110. Pedersen, J. S., & Dobbin, F. (2006). In Search of Identity and Legitimation Bridging Organizational Culture and Neoinstitutionalism. *American Behavioral Scientist*, *49*(7), 897-907.

111. Porter, M. E. (1998). *Clusters and the New Economics of Competition.* Cambridge, MA: Harvard Business Review.

112. Portes, A., Guarnizo, L. E., & Haller, W. J. (2002). Transnational Entrepreneurs: An Alternative Form of Immigrant Economic Adaptation. *American Sociological Review*, *67*(2), 278-298.

113. Ranga, M., & Etzkowitz, H. (2013). Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society. *Industry and Higher Education*, *27*(4), 237-262.

114. Rannala E. (2014). *Building a Tech Startup Community.* Presented at *Startups & Innovation in Orange County,* Orange, CA, 10 Feb 2014.

115. Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses.* New York: Crown Publishing.

116. Rogers, E. M. (1976). New Product Adoption and Diffusion. *Journal of Consumer Research*, *2*(4), 290-301.

117. Rogers, E. M. (1983). *Diffusion of Innovations.* New York: Free Press.

118. Rogers, E. M. (2003). *Diffusion of Innovations, 5th Edition.* New York: Free Press.

119. Rothwell, J., Lobo, J., Strumsky, D., & Muro, M. (2013). *Patenting Prosperity: Invention and Economic Performance in the United States and Its Metropolitan Areas.* Brookings.

120. Sawhney, M., Gulati, R., & Paoni, A. (2002). *TechVenture: New Rules on Value and Profit From Silicon Valley.* Hoboken, NJ: John Wiley & Sons.

121. Saxenian, A. (1994). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128.* Cambridge, MA: Harvard University Press.

122. Saxenian, A. (2008). The International Mobility of Entrepreneurs and Regional Upgrading in India and China. In *The International Mobility of Talent: Types, Causes and Development Impact.* A. Solimano (Ed.), 117-144.

123. Scheiber, N. (2015). Andreessen Horowitz, Deal Maker to the Stars of Silicon Valley. *New York Times,* 1 May 2015.

124. Schumpeter, J. A. (2013). *Capitalism, Socialism and Democracy.* New York: Routledge.

125. Senor, D., & Singer, S. (2011). *Start-up Nation: The Story of Israel's Economic Miracle.* New York: Twelve.

126. Sessions, R. (2006). A Better Path to Enterprise Architectures. *Microsoft Technical Articles.*

127. Shamah, D. (2012). Is Israel the Best Place to Start Your Start-up? ZD-Net.

128. Shane, S. A. (2000). *A General Theory of Entrepreneurship: The Individual-opportunity Nexus.* Northampton, MA: Edward Elgar Publishing.

129. Simon, H. (1996). *The Sciences of the Artificial.* Cambridge, MA: MIT Press.

130. Snowden, D. J., & Boone, M. E. (2007). A Leader's Framework for Decision Making. *Harvard Business Review.*

131. Star, S. L., & Griesemer, J. R. (1989). Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, *19*(3), 387-420.

132. Startup Genome. (2012). *Startup Ecosystem Report.*

133. Stross, R. E. (2012). *The Launch Pad: Inside Y Combinator, Silicon Valley's Most Exclusive School for Startups.* New York: Penguin Group.

134. Surman, T. (2013). Building Social Entrepreneurship Through the Power of Coworking. *Innovations*, *8*(3-4), 189-195.

135. Swidler, A. (1986). Culture in Action: Symbols and Strategies. *American Sociological Review*, *51*(April), 273-286.

136. Tahvanainen, A., & Steinert, M. (2013). *Network! Network! Network! How Global Technology Start-ups Access Modern Business Ecosystems.* Finland: ETLA Working Papers.

137. Takhteyev, Y. (2012). *Coding Places: Software Practice in a South American City.* Cambridge, MA: MIT Press.

138. The Economist. A Cambrian Moment. *The Economist.* 18 Jan 2014.

139. The Economist. What Exactly Is An Entrepreneur? *The Economist.* 16 Feb 2014.

140. Thiel, P., & Hoffman, R. (2012). *Peter Thiel and Reid Hoffman Discuss PayPal and Startup Success.* Forbes. Video: https://www.youtube.com/watch?v=MiTfx4bECDA. Retrieved 6 Jun 2014.

141. Tholander, J., Normark, M., & Rossitto, C. (2012). Understanding Agency in Interaction Design Materials. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2499-2508.

142. Tian, X., & Wang, T. Y. (2011). Tolerance for Failure and Corporate Innovation. *Review of Financial Studies*, *27*(1), 211-255.

143. Turner, F. (2008). *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism.* Chicago, IL: University of Chicago Press.

144. Turner, V. (1977). Symbols in African Ritual. In *Symbolic Anthropology: A Reader in the Study of Symbols and Meanings.* J. L. Dolgin, D. S. Kemnitzer, & D. M. Schneider (Eds.), New York: Columbia University Press, 183-194.

145. Turner, V., Harris, J. C., & Park, R. J. (1983). Liminal to Liminoid, in Play, Flow, and Ritual: An Essay in Comparative Symbology. In *Play, Games and Sports in Cultural Contexts.* J. C. Harris & R. J. Park (Eds.), Champaign, IL: Human Kinetics Publishers, 123-164.

146. Turner, V. W. (1967). *The Forest of Symbols: Aspects of Ndembu Ritual.* Ithaca, NY: Cornell University Press.

147. UP Global. (2014). *Fostering a Startup and Innovation Ecosystem.*

148. Urrieta, L. (2007). Figured Worlds and Education: An Introduction to the Special Issue. *The Urban Review*, *39*(2), 107-116.

149. Van de Ven, A. H. (1986). Central Problems in the Management of Innovation. *Management Science*, *32*(5), 590-607.

150. Wadhwa, V., Saxenian, A., & Siciliano, F. D. (2012). *Then and Now: America's New Immigrant Entrepreneurs, Part VII.* Ewing Marion Kauffman Foundation Research Paper.

151. Wadhwa, V., Saxenian, A., Rissing, B. A., & Gereffi, G. (2007). America's New Immigrant Entrepreneurs: Part I. *Duke Science, Technology & Innovation Paper*, (23).

152. Walshok, M. (2013). A Systemic Approach to Accelerating Entrepreneurship. *Innovations*, *8*(3-4), 7-17.

153. Wenger, E. (1999). *Communities of Practice: Learning, Meaning, and Identity.* Cambridge, UK: Cambridge University Press.

154. Whitney, T., & Ames, E. (2014). Innovation and Inclusion. *Communications of the ACM*, *57*(12), 28-30.