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Banking on the Unbanked: Everyday Peripheral Technologies for Mobile Money in Peru

By

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DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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in the

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DAVIS

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Committee in Charge

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ABSTRACT

In 2016, an association of Peruvian banks launched a mobile money platform, Bim, announcing it as a tool for financial inclusion. Aligned with the World Bank's goal of 'universal financial access by 2020' and with Peru's National Financial Inclusion Strategy, Bim promised to provide access to financial services for the seventy percent of 'unbanked' Peruvians living in so-called informal cash economies –while generating profits for the banks. Based on extensive fieldwork with engineers, bank representatives, marketers, development consultants, state bureaucrats and shop-to-shop promoters involved in the design and daily operation of this mobile money platform, my research traces the heterogeneous communities of experts co-producing mobile money as both a financial technology for expanding finances in Peru, and as a development model that designs the 'unbanked populations' it seeks to engage.

By peering into the practices of these experts, my dissertation examines the specific contours of the financial-development network they promised to build and integrate, and the extent to which it mirrors and extends older microfinance practices, further capitalizing on the resources of people living at the margins of more fully banked economies rather than opening new possibilities through the democratization of money as 'digital cash.'

Rather than a top-down story on how capitalism always wins, my account focuses on the vibrant life occurring within this evolving techno-financial wave. I pay close attention to the tensions and controversies among the various sets of experts involved (bankers, state regulators, engineers implementing the technology), and to the day-to-day economies of small shops that these financial interventions aim to transform. On different scales, both shopkeepers and experts are figuring out how to navigate these money transformations, grappling with the potential future directions that their actions might open or foreclose.

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INTRODUCTION
A Corner Shop Universe Navigating Financialization

The system is made of lots of *partecitas* (small pieces), says Margarita, a senior engineer in the mobile money project of a partnership of banks that I studied in Peru. This is the first of many conversations we had while I was conducting fieldwork.[1] She worked for a company created by a partnership of banks that were, back in 2015, collaborating in the creation of a single mobile money platform that would use basic cellphones to become, in the words of its engineers, a "unique highway" to cater to *los no bancarizados* (the "unbanked"). The bank partners aimed to bring banking services to people without bank accounts—or to bank the unbanked—using non-smart cellphones as the entry point for offering them financial services. They called their endeavor "financial inclusion."

At the time of this first conversation, the mobile money platform was not yet ready. Its engineers were building it while still figuring out how to connect all its *partecitas*—each of which were, as per Margarita's descriptions, themselves entire systems. For instance, she mentioned that the platform had many providers: one 'little piece' was comprised of the systems of the local mobile phone carriers, and another piece was the system where transactions were processed, which was run by a Swedish telecommunication company. She also referred to the telecom components of this mobile money project as 'little systems' because they only transported information (sending requests for money exchanges and receiving digital receipts of their execution in the form of short messages or SMS), while the Swedish company was the 'big system' executing the transactions and dealing with "information that is also money." She explained the entire operation of systems exchanging

[1] This conversation happened as I was doing preliminary fieldwork over the summer of 2015. I conducted my long-term fieldwork between 2107 and 2019. I spent 10 months in Lima during 2017, followed by a primarily online and remote fieldwork phase in 2018, and I returned to Perú for two months in mid-2019.

information and information that is also money as a *digestion process*. To make it easy to follow for someone unfamiliar with software engineering, she performed her description for me, using objects she had available on her office desk to represent the information exchanged and digested between smaller and larger systems. Her computer screen served as an analogy for the "big system;" her coffee cup as a proxy for the "little system;" her iPhone represented a basic cellphone—the technology imagined for the 'unbanked'—and finally, an eraser stood in for a "small data package" circulating from one system or component to the other.

I stared at her, looking confused. *Is the mobile money wallet a combination of other 'systems' or 'platforms,' or is it an integration of them? Where are the banks, the owners of this mobile money project, in this explanation that so far only includes telecommunication corporations? And who and where are the 'unbanked'?* My questions were silent, as I waited for her to continue with her train of thought. She paused and, looking back at me, seemed to assess the situation. Realizing that my level of understanding was closer to zero, she took a step back. Without losing her characteristic calm demeanor and gentle smile, and before diving further into the system and its components, she explained that 'mobile money' had to originate somewhere—it was a transformation of cash! The 'unbanked' user had to bring cash to an *agente* (agent) at a local point of sale, often located in *bodegas*, *boticas* (corner shops and neighborhood drugstores). In exchange for the cash, the agent would then transfer the same amount of e-money to the mobile wallet on the user's phone by logging into their own wallet via a telecommunication channel called USSD and selecting the "send money" option from a menu that would appear on the tiny screen of their non-smart, non-internet-connected keyboard phone. Once the transaction was completed, the system sent to both sender and receiver a "digital receipt" of the transaction via SMS. She referred to this type of transaction as a cash-in. If users wanted to convert their money back from digital and into cash—or cash-out the e-money from

their e-wallets—, they needed to find a bank agent in another small shop who could perform that operation for them.

The fact that in her explanation mobile money originated in local small shops, where shopkeepers perform monetary operations on behalf of banks (acting as agents) for people without prior relationships with banks (i.e., without bank accounts), reveals the assumptions the engineers were designing with, and of what they were designing. For people with bank accounts, that is, people *already banked* —like Margarita and me—the money we own is already digital and 'stored' (accounted for as information) in a bank.[2] Most of our transactions occur without altering the material state of that money; it remains digital when exchanged via credit or debit cards or through other internet or mobile-based channels. Banked individuals occasionally need cash, and to obtain it, they visit a bank branch or an ATM to withdraw it from their accounts—effectively materializing the money stored digitally as information into physical bills and coins. Banks 'store' this money for their clients, but the banks also borrow it from them to invest and lend to others—that is how the banking model works. Banked money doesn't roam freely as cash with its exact value printed in bills and coins; instead, banks use it, they invest it to grow 'the market,' including the market of money.

Mobile money starts with previously unbanked cash and offers it an entry point into the digital realm through small shops, human agents who receive and convert cash into digital tokens, and telecom corporation infrastructures or *tuberías* (pipelines), as engineers sometimes referred to them. These infrastructures, at the time of this conversation in 2015, were not yet standardized as financial conduits. In 2024, and especially if you live in a relatively wealthy area that is highly connected to the latest technology trends—from 5G to self-driving cars to AI dating apps—like the one where I am finishing this dissertation in California, it may be hard to recall a not-so-distant time

[2] In my dissertation, money refers to state issued currency unless otherwise noted.

when mobile phones were not also wallets of sorts, with multiple payment options embedded in them (i.e., Apple Pay, Google Pay, banking Apps, Venmo, PayPal, WeChat, and so on).

This mobile money project in Peru emerges in a period between mid-2000s and specially the 2010s, during which different institutions—telecommunication companies, banks, states, international development and philanthropic organizations, tech corporations and startups alike— in many places of the world were figuring out how to use mobile phones for transactions.[3] In this universe of vibrant experimentation, banks attempted to offer mobile channels for their existing clients (and perhaps those of the competition too); startups claimed to be more efficient and faster than traditional banks in handling digital transactions between clients of different banks (e.g., Venmo, WeChat); and digital applications were created to meet the needs of banked people whose transactional communities extended beyond national borders (e.g., Wise, PayPal, Remitly). These experiments were designed for populations assumed to have both mobile phones (mostly smartphones) and bank accounts.

Another subset of initiatives bridged the world of finances and the world of social development, attempting to 'bank the unbanked,' first through basic cellphones and later also through smartphones. The proponents of these initiatives labeled them "financial inclusion" and targeted populations assumed to have phones but no prior 'formal' relation with banks. This is where the initiative I studied, known internationally as Modelo Peru (Peru Model), fits in. The proponents of this banking project aimed to push the digitization of cash via mobile phones to integrate local cash economies (or the 'informal' economies of 'the poor') into established financial systems. They called it "financial inclusion"—following the international development jargon of that time—where

[3] This is also the time when cryptocurrencies, starting with Bitcoin in 2009, emerged—another parallel universe of vibrant experimentation and competition, initially aimed at disintermediating money from the control of states and banks. In later iterations, corporations and states also began exploring blockchain technologies for futures of money in which they remain included and retain control. Cryptocurrency experimentation is beyond the scope of my work, which focuses on experimentation with money as state currencies.

"inclusion" could be understood in two ways: as the inclusion of money in national economies, such as cash that was not previously digitized through other channels (like credit cards) becoming digitized, and as the inclusion of people ('the poor') in market economies—an inclusion that extends, thanks to digitization, beyond the national space. They alternatively called it "banking the unbanked"— in the financial sector's argot popularized even more by the World Bank— as bankers and the engineers who worked for them were dedicated to the task of digitizing cash via mobile phones and figuring out how to keep money under the control of banks as it traveled through the telecoms' pipelines.

While their endeavor was framed in terms of banking, mobile money, in its earlier iterations such as Kenya's M-Pesa, which started in 2007, was, however, an innovation that emerged from the telecommunications sector. Banks operated in the background; they didn't control the data generated by this money's circulation via telecom networks and only minimally profited from it. Developed by Safaricom, the largest mobile network operator in Kenya, in partnership with the UK telecom Vodafone, M-Pesa's mobile money was more akin to digital cash than to traditional banked money. This is because mobile phones, acting as digital wallets, functioned less like savings accounts and more like digital piggy banks (Maurer et. al. 2013).

In this arrangement of things, money neither 'grows' by accruing interest nor diminishes through maintenance fees. M-Pesa was, at least at its beginnings, more of a digital cash model primarily because every digital token was backed by 'real' yet still digital money in *cuentas custodia* or fiduciary accounts, which in turn were backed by physical money held in banks—that only operated in the background of this model. This means that if every mobile money user wished to withdraw their money simultaneously in paper form, they could do so—something that is not possible with the banking model, where most money is lent and thus 'not there' for the savers to access. This is the mobile money model that Modelo Peru originally replicated, and that Margarita

was explaining to me in the vignette at the beginning of this introduction. But, as I suggest through the dissertation, they replicated the model as a learning process, aiming to figure out how to reverse-engineer it in order to keep the money and data under the control of the partnership of banks rather than Peruvian telecoms—while still using their infrastructure.

Based on extensive fieldwork with engineers, bank representatives, marketers, economic development and microcredit practitioners, state bureaucrats and shop-to-shop promoters involved in the design and daily operation of the mobile money platform of Modelo Peru's partnership of banks, my research traces the heterogeneous communities of experts co-producing mobile money as both a financial technology for expanding finances to the 'unbanked populations' in Peru, and as a development model aligned with the World Bank's goal of 'universal financial access by 2020' and with Peru's National Financial Inclusion Strategy. I understand each of these experts as a para-ethnographer (Holmes and Marcus 2005) with a distinct "cultural" analysis of the world they aim to transform. By peering into their practices, I sought to understand the specific contours of the financial-development network they promised to build and integrate, and whether it mirrored and extended older practices of microfinance to further capitalize on the poor (Kar 2018; Roy 2010; Elyachar 2005), or whether it might open new possibilities through the democratization of money as 'digital cash' (Maurer et al. 2013). The questions that guided my fieldwork were: Who do the builders and promoters of this mobile money platform imagine as beneficiaries of the emergent economy they are making? How will they measure its success? How are they categorizing and prioritizing people through real time allocations of technical labor and software/organizational choices as they build this infrastructure? What futures for money and for people is this infrastructure bringing about?

My dissertation is an ethnographic account of the design and deployment of this particular mobile money experiment called Bim (for *Billetera Movil* or Mobile Wallet), alongside other

simultaneous mobile money experiments (such as Yape and Tunki) conducted independently by some of the largest banks involved in the Modelo Peru partnership. These banks all claim to promote financial inclusion while competing against each other in the race to bank the unbanked. By examining these endeavors, my research explores a period during which new technologies for exchanging money as state-issued currency were being created through intensive labor and various practices. I suggest that these technologies and practices are primarily aimed at monopolizing the digital existence of money as "banked money" while foreclosing the possibility of it functioning more like digital cash. At the same time, these local and global networks of experts dedicate significant efforts to establish and secure a dominant imagination that enforces this equation of digital money as "banked money"—a topic I will expand on soon.

Additionally, my account examines the vibrant life occurring within this techno-financial wave, as it keeps evolving and while it lasts, focusing on two aspects: the economies of small shops that these financial interventions seek to transform, and the tensions and controversies among the various sets of experts involved (bankers, state regulators, engineers implementing the technology). At different scales, both shopkeepers and experts are figuring out how to navigate these money transformations, unfolding through their actions and decisions, and grappling with the potential future directions they might open or foreclose, as I will explain soon.

Methods

Based on extensive fieldwork between 2015 and 2020, my dissertation studies this mobile money initiative from its design and testing phases through to its implementation. I conducted ethnographic research and interviews with the designers, developers and implementers who were working to make mobile money circulate across and between social worlds. I organize this motley

crew of experts into three groups, each representing different perspectives and material practices in relation to Modelo Peru.[4]

First, there is the group of **high-level strategists**, or as a government official described them "those who fly at five thousand meters above ground and, in their helicopter view that plans and oversees at enough distance, all ideas seem feasible and able to work smoothly." This group includes bank CEOs, ministers and state regulators (like the one suggesting this description), international development consultants, and development economists. Their work focuses on envisioning possible futures for their business and/or for the country, and aligning their mission with the chosen direction, often framed by grand promises and large-scale ambitious goals. They are concerned with the link between economic growth and policymaking, statistics and population management. While I had the opportunity to formally interview some individuals in this group, I mostly relied on secondary and publicly accessible sources due to their status as public figures.

The technical implementers and mid-level managers are the second group, or those "with tunnel vision" tasked with turning high-level ideas into a functioning financial infrastructure, specifically the mobile money platform known as Bim. Their work involves addressing the daily technical and logistical challenges, such as system crashes, project indicators, budget and data management, testing and reporting, and is oriented to producing tangible results that demonstrate the profitability of this initiative. Most, but not all, of the people in this group are engineers, like Margarita, working in PDP (Peruvian Digital Payments), the company that the banks created to

[4] I did a preliminary fieldwork visit over the summer of 2015 when the conversation that starts this introduction happened. I conducted my long-term fieldwork between 2017 and 2019. I spent 10 months in Lima during 2017, followed by a primarily online and remote fieldwork phase in 2018, and I returned to Perú for two months in mid-2019, which I spent between Lima, Cusco and Piura revisiting my informants and fieldwork routines and tracing the expansion of Bim and other mobile payment wallets in other regions of the country. Online fieldwork extended through 2020, even 2021, as I started the writing of the dissertation and continued to have regular online conversations with my fellow para-ethnographers.

administer their partnership. I spent half of my time as a participant-observer of their practices. These implementers realized at some point in the transformation of Modelo Peru from a project to an actual infrastructure for money (Bim) that the banks that hired them had many other parallel projects, often in direct competition with the partnership in which they were allegedly collaborating with each other. For instance, the three largest banks in this partnership, also its main investors, were concurrently—and secretly—developing their own proprietary and non-collaborative banking apps. These apps were developed, in part, drawing lessons from Bim, and initially targeted their already-banked clients, assumed to be smartphone users. They were launched almost simultaneously with their collaborative launch of Bim for 'the unbanked' via basic phones.

Engineers made sense of the situation by often remarking that this is how banks *really behave*, a behavior they explained by comparing it with design/test loops they were familiar with. For them, as banks experimented with Bim alongside other digital financial projects, the banks filtered their options: deciding their bets, determining what technology would prevail, what risks were more concerning to them, and allocating full support to some endeavors (such as their proprietary mobile banking apps) while withholding it from others (like the collaborative Bim). Yet Bim was not *fondeado* or "sunk" (as in sinking something on purpose to the bottom of the ocean), as these engineers knew was also common practice for banks—to acquire a potentially disrupting company or tech for their business-as-usual only to discontinue it. Instead, banks keep it barely alive for continued experimentation.

While the banks were invested in their non-collaborative mobile banking apps to become the primary pipelines through which money, including that of the 'unbanked,' would circulate, they appeared to keep Bim alive as a prestige token to generate social capital and reputation with other audiences, such as the state and international development forums. Bim enabled them to assert they were fostering 'financial inclusion,' while continually leveraging insights from this collaboration. In

this light, Bim—a full-scale production for 'the poor'—seemed to be part of a design feedback loop for the products the banks were actually interested in developing. By capitalizing on the ongoing efforts of the technical implementers and mid-level managers' to propel Bim forward, and using the sociomaterial traces of such efforts (meetings, documents, presentations, tests, pilots, Bim's monthly transaction statistics) as performative evidence, the banks, particularly the largest ones, could claim that there were permanently and always trying to include 'the poor.'

The paradox these engineers faced was that they were dedicated to the task of generating trust in a new digital payments system to ensure it functioned properly, even though they were deploying it on behalf of entities they themselves could not trust. As scholars of digital money know, money is fundamentally a shared fiction; anything can serve as money as long as it is socially accepted (Maurer 2015; Hart 2017; Brunton 2019; Swartz 2020). The value of something serving as money depends on an interplay between trust and social acceptance in which social acceptance is both a result of trust and an enactment of trust—that generates more trust in return. And yet, mistrust (between the bank partners, and between the banks and the implementers of their collaboration) abounded in a project that needed to generate trust to convince people to use its infrastructures.

While accompanying the technical implementers and mid-level managers, I observed this conundrum these experts faced in performing their daily tasks, which further attuned them as para-ethnographers. They were determined to make Bim work. This task not only secured their jobs—after all, Bim was also their creation, and they believed in it. In my dissertation, I trace the tensions between the uncertainty of the banks' support and the creative, and often low-budget field experiments and collaborations the engineers deploy, in turn, in their determination to ensure Bim' survival and success.

The third group consists of **field collaborators**, who have a street-level or everyday life perspective and are formally known as Bim advisors. They engage directly with the public in search of the 'unbanked,' going door-to-door in low-income neighborhoods in Lima, Peru's capital, to recruit small shop owners as agents for Bim (or Bimmers). The advisors provide technical support and offer monetary incentives to entice the small shop owners to enroll. Once enrolled, shopkeepers, or Bimmers, receive *comisiones* (commissions) per transaction conducted on their clients' behalf (such as phone airtime top-ups, microloans repayments) using Bim. Both Bim advisors and Bimmers serve as crucial infrastructural entry points for the mobile platform, where cash gets converted into digital money.

Most Bim advisors are in their early twenties, besides their leader in his mid-thirties. Many are students in colleges or technical institutions while working for Tambo, a small business with fewer than five permanent workers that manages the Bim advisors' strategy. Tambo is a third-party in the PDP network, which itself is a third party that manages the mobile money infrastructure (Bim) resulting from the banks' partnership. In short, the field collaborators organized by Tambo are subcontractors of the engineers, who are themselves subcontractors of the banks. Similar to the telecoms and the Swedish company that Margarita described, which manage 'small' and 'big' systems for Bim, Tambo is another key provider. However, Tambo supplies another type of technology: the network of humans necessary for the mobile money platform to function at the peripheries of Lima and of what is centrally imagined as 'formal economy.' These are both geographical peripheries (the low-income, hilly outskirts of the capital city of the country) and peripheries of the experts' imagination of the digital.

In other words, Tambo operates the human extra-digital realm essential for the digital infrastructure to succeed, often referred to by its engineers as the "last mile." I spent half of my time as a participant-observer of the practices of this network of laborers for the banks, who worked long

hours six days a week visiting shopkeepers, and which I refer as the "money missionaries," given that many Bim advisors where affiliated to the same Christian church. Through them, I got a glimpse into the lives of the shopkeepers (or Bimmers), who regularly interact with promoters from banks, telecoms, and payment providers, besides the Bim advisors. In exchange for meager monetary incentives per transaction through the digital infrastructures of these entities, many merchants become 'agents' providing services for their clients on behalf of these corporations while assuming the risk of handling cash. I observed the merchants' highly creative methods of making ends meet—negotiating with all these "missionaries" attempting to bank them (to then bank *on* them)—and carefully assessing and calculating when to participate, to what extent, and when to withdraw from these schemes. As a women merchant explained, they don't marry to any of these companies; they keep their options open.

While some chapters focus more on the work of one group, such as chapter 1 and the high-level strategists, in others, the perspectives and practices of these groups intersect, overlap, and coordinate. Although most agreed to the use of their real names on my research, I have used pseudonyms to refer to my informants and, in some cases, divided their identities into multiple characters to protect their anonymity, except when they were public figures speaking in their official capacity. I have also changed the names of some institutions.

The center of my dissertation is about how these sets of experts design populations/users as they design a technology for money and the challenges they encounter in deploying this technology with actual people. Although the daily practices of users were not part of my original research plans (though they may become part of its next phase), their presence—both as abstractions in modeling and testing phases of this technology, and as real merchants and their clients in the work of the 'money missionaries' I spent time with—permeates my writing. The universe of small shops, which exists outside the high-level strategists and mid-level implementers' offices and planning and

prototyping practices, resists, circumvents and pursues its own agendas in its relatings to these technologies. This universe is the counterpoint I think with.

Banking on the unbanked: from e-money as digital cash to banked money

On a different day, in a different year—2017— Fernando, another engineer, is now attempting to explain to me the distinction between banked money and e-money. We were at the headquarters of PDP (Peruvian Digital Payments), the company created by the partnership of banks informally known as Modelo Peru to run their mobile money system called Bim. This is the same office space where Margarita first explained how this mobile money worked as a series of digestive systems mostly controlled by telecoms but, continuing with her metaphor of digestive systems, ultimately feeding the banks. I have spent the day accompanying Fernando in his meetings with bank representatives and other sorts of office work such as analyzing data digested by the mobile money platform and all its interconnected systems, to produce reports. My reader should remember that this is a project initiated by banks, which began by nearly replicating the infrastructural model of M-Pesa, a telecom-driven mobile money system, in order to learn from it and reverse-engineer it to work for banks. Initially, this system operates with e-money which is different from banked money. As time passes these two forms come closer together, but that was yet to happen when Fernando and I had this conversation. To explain the difference between these two forms of money, Fernando uses the metaphor of a casino:

> "When a casino gives you a hundred dollars in chips, it is because you have given them one hundred dollars. So, what supports the value of each chip is the money behind it, and yet these chips cannot be used outside that particular casino, they can't be exchanged anywhere else. Now, in the model [short for the Peru Model] it is a little more complex: imagine that all the casinos agree to make their chips interchangeable. Then you need someone to issue the chips so that everyone can have them. PDP

> manages a payment agreement between all the banks partnering in the Model which in practical terms means that it provides that support for the issuance of chips. But each casino, meaning each bank, decides how many to have and how many they want to play with in their cycle, and they can exchange their chips with whoever they want [the other banks involved in this mobile money platform]."

While I followed his example, it still was unclear for me if, for instance, a transaction with a credit card, was not also considered e-money, in the terminology and legal frameworks of digital money used in Peru. Fernando responded that it is not considered electronic money because e-money mimics physical money: it must be issued or minted.

> "For you to have a one-sol coin [sol which means sun is the Peruvian national currency], it means that the Central Reserve Bank has been authorized by the government and the Ministry of Economy and Finance to give that coin the value of one sol. If you deposit that coin in a bank, you are depositing a coin that has already been issued and is in circulation. Banks use that *circulante* [circulating money] for secondary purposes, like when I go to the shop and buy something with my one sol using my debit card."

A card, internet banking, and mobile banking are electronic channels for money that has already been issued by the state. As this money becomes banked, it allows banks to assign a secondary use to it—or to financialize it. In contrast, electronic money must go through an issuance process because it requires assigning value to it, which for Fernando "is more of an economic issue than an operational one." With e-money, the state, authorizes some entities, like PDP, to issue e-money through specific regulation, similar to casino chips, and assign it a 1:1 value—each chip backed by the exact amount of state currency. Then my question remained: why were the banks invested in mobile money that yields money that was different than banked money? Furthermore, why was mobile money talked about in terms of banking (as banking the unbanked) if it was not bankable?

Fernando with lots of patience, and always diagramming or sketching what he told me, continued with the same casino example. He explained that the casino has the authorization to give me an account without knowing me, meaning that different than banks, it doesn't need to perform the KYC ("know your client" or "know your customer") checks. Instead, the casino (who he is personifying in his example) would simply tell me:

> "Miss, I can only give you a certain number of chips, and you can only play with a certain number of chips." But then you say, "I'm not just anyone. I'm Mariel." I reply, "No, I don't know you." But you insist, "Yes, in fact, I've already worked with you before, I have a savings account with you,' or 'I have a credit card from you.'" Ah, you have one of my products? Then you are a member of the casino, and you can play with more chips. So that's the difference [in the mobile wallet] between a 'simplified account' and a 'general account.' In a simplified account, you don't need to have a KYC. In a general account, you do need to have a KYC. That's where the connection to banking comes in."

Mobile money, framed as "financial inclusion" for the poor and categorized as e-money, was regulated by the state with some monetary limits, which differentiated it from traditional banked money. In Fernando's explanation, a simplified mobile money account differs from a 'general account,' which is similar to a savings account—thus, banked money. As mobile money users reach certain thresholds, they must complete KYC paperwork to become formally banked along with their money. Banks can then offer microloans, insurance, and other services to these users, incorporating their money into their capital for lending purposes. This system cleverly facilitates the incorporation of mobile money users into the banking system, as it *increasingly banks those who may not initially want to be banked*, especially if the mobile money technology succeeds in becoming integral to their daily lives.

By "banked money," I mean money that is financialized by banks and, in turn, serves finance. The digitization of money via bank-run mobile money means that unbanked state-issued money is transformed into a tool or asset within the financial system: it becomes *money that does*

finances. Instead of being a mere means of exchange or a form of currency, once it enters the banking system via its digitization, it begins to work for the banks by generating credit and debt relations, accruing interests and fees, and expanding their markets. It becomes integrated with broader financial markets, where banks use it for investments, lending, and other operations, ultimately serving the interests of the financial sector rather than the 'poor' populations it claims to benefit or 'include' according to its rhetoric.

The narrative that imagines and configures the digitization of previously unbanked cash via mobile phones as equivalent to banking—and thus financialization—is promoted by numerous institutions and alliances. For instance, banks and the companies within their financial networks—such as transaction processors, payment networks and financial service providers—along with international organizations like the World Bank, the International Monetary Fund, and some countries' international development agencies such as USAID and CIDA, play a key role. Think tanks, universities, Microfinance Institutions, NGOs, and governments also contribute to this promotion. Additionally, international alliances where these and other entities come together and collaborate—such as the Better than Cash Alliance (BTCA), the Consultative Group to Assist the Poor (CGAP), Alliance for Financial Inclusion (AFI)—are instrumental in advancing this narrative. Peruvian government regulators, think tanks, NGOs, and private corporations, including banks and their associations like Modelo Perú, participate in these networks in various capacities, which I also examine in this dissertation.

These multiscalar arrangements that collapse the local and the global and patrol the boundaries of what can be thought regarding money (and how it should be managed) not only confine money to the realm of banking and finance but also lead to people being statistically categorized, studied, and subject to intervention in terms of their relationship with banks. In other words, I suggest that the project of financializing previously unbanked money requires studying and

designing populations as both users of mobile phones and as financially excluded or unbanked and living in 'informal' cash economies. These populations need to be invented before these financial development networks can *bank on them*, as my title suggests.

Thus, the process of designing and developing all the *partecitas* of a technology aimed at banking on the unbanked (such as Bim and Modelo Perú) necessarily involves configuring both the user and the context of use for the technology (Woolgar 1991; Oudshoorn, Rommes, & Stienstra, M. 2004; Maurer 2012). While chapters 1 and 2 of my dissertation are more concerned with the design and testing of this mobile money technology, chapters 3, 4 and 5 contrast this design process with the actual users and contexts of use in which experts attempt to ground user populations and models. In Chapter 4, I describe the challenges and field experiments deployed by engineers to ensure that Bim not only survives but thrives, despite the lack of support from the banks. In Chapter 3, I discuss the practices of regular people who are coded as unbanked and their mistrust of banks. In Chapter 5, I show that rather than lacking interactions with banks, the unbanked are 'informal' users of banks' services without being their clients; they engage with bank services to pay specific bills, send remittances and collect payment without having bank accounts. In other words, they keep under their control how and when, and in which terms, they relate with banks.

On one hand, the practices of merchants in low-income areas of Lima, the peripheries of the capital city of Peru, are not as homogenously unbanked or un-digital as they are portrayed by these experts. Similarly, the context in which the mobile money technology will be used—the networks of small shops where shopkeepers and their clients circulate their cash economies—is not the uncharted territory or untapped market suggested by its proponents' narratives. Rather, as I will describe in these pages, it is a space that is constantly assessed and highly mediated by, among others, the very organizations that collaborate in this endeavor, through various interventions, arrangements, and even different partnerships. For instance, since the mid-2000s, many shopkeepers have been acting as

agents performing digital transactions for telecoms and banks alike in exchange for meager monetary commissions.

This situation required, as I observed during fieldwork, that the engineers leave their office and conduct fieldwork in order to make their technology work. They did fieldwork both personally and through a team of 'Bim advisors'—promoters of the technology who go from shop to shop in these neighborhoods and report back to them weekly. These advisors serve as both the 'last mile' of the technology needed in the peripheries where it is supposed to work and as an infrastructure of knowledge (helping engineers and managers to understand, better design, and bank these new groups) as I extensively discuss in Chapter 4.

In Chapter 5, I accompany the fieldworkers hired by the experts in their daily walks from one shop to another as they promote the new technology and attempt to carve out a space for Bim in these highly mediated environments. I observe the various forms of money and non-digital devices—such as physical receipts—that they mobilize to convince people to bring their cash into this mobile money platform. I also highlight how the shopkeepers we encounter skillfully navigate all these tools and relations with bank intermediaries (in their role as bank agents), with telecom intermediaries (in their role as telecom intermediaries), with Bim advisors (in their new role as intermediaries of a partnership of banks) to make ends meet at the margins of more fully banked economies. In this way, my research ultimately reveals both the friction and the numerous sets of human intermediaries that are required for this technology to function, as well as the tinkering and creativity displayed by all those involved in this endeavor.

In the following section I engage with discussions on financial inclusion, informality, and financialization, drawing primarily from the fields of anthropology and science and technology studies, as a main theoretical framework for my research, and which is complemented by additional conceptual framings developed in each chapter according to their specific matters at hand.

Financial expansion via extraction

Financialization

There is consensus among researchers in different social sciences' fields, including economists, that finance is at the center stage of contemporary capitalism, a process they name 'financialization,' even though the concept has different meanings and emphasis depending on the author (Epstein 2005; Lapavistas 2013; Piketty 2013; Aalbers 2019). Financialization, understood as the increasing dominance of "financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (Epstein 2005, 3) is a regime of "accumulation by dispossession" (Harvey 2003). The growing presence of financial "practices, measurements, and narratives, at various scales," results in "a structural transformation of economies, firms (including financial institutions), states, and households" (Aalbers 2019, 4) that produces and dramatically intensifies inequality to the benefit of corporation owners, stockholders, and rentiers (Duménil and Lévy 2005). Financialization, in short, historicizes a time in which, paraphrasing economist Thomas Piketty, oligarchs are back (2013).

With financialization, "capitalist social relations are increasingly mediated by speculation and risk rather than labor" (Kar 2018, 3). Finance is no longer relegated to Wall Street but shapes life in Main Street through different financial technologies such as mortgages, pension savings, credit cards, student debt, and so on, and infuses cultural production and popular imagination (Knorr Cetina and Preda 2005; Martin 2002). It is a process in which the so-called 'real economy' is "converted into a servant of passive investment that either exploits or bypasses ordinary workers and households, with a bottom line of more household debt, shrinking labor incomes, diminishing job security and weak employment growth" (Turbeville 2015, 3).

The financialization of development: women of color, cellphones and cash

Financialization is in permanent search of things that can be turned into capital, and the global south is the space in which financialization trends meet development practices. In this space, 'the poor' become the newest market to be conquered by finances. Or where, paraphrasing Ananya Roy, it is possible to see the tensions between the promised "democratization of capital," which gets operationalized as access to financial services to eradicate global poverty on one hand, and the "financialization of development," which takes poverty alleviation as the new frontier of capitalism, on the other (Roy 2010, 32). Roy's work "focuses centrally on those who generate the capital and the expertise around poverty eradication" (34). She proposes to understand development in the new millennium as "a particular type of commodity" created by these experts' practices which she follows as a global commodity chain, in "circuits of capital and truth"—or how knowledge-making practices go hand by hand with money-making ones (35). For Roy, the financialization of development happens through the strategies deployed by different financial actors who convert the microcapital of these populations into new global financial flows.

Women of color take center stage as the main 'beneficiaries' of microfinance. While initially microfinance was uncritically celebrated as a 'solution' to the problem of formalization and access to affordable and fair financial services for the poor, more recent scholarship, both in academia and in the professional sector has more mixed reviews. Anthropologists Sohini Kar and Caroline Schuster consider that microfinance "has created a global infrastructure for the extraction of capital from the world's poor and its circulation with the premise of economic and women's empowerment" (2016, 348). Recent scholarship in Science and Technology Studies as well as ethnographic studies on microfinance explore the ways in which people in the global South, particularly women, and even

girls, and their labor turn into assets mined for financial expansion (Murphy 2013; Zulfiqar 2017; Kar 2018; Radhakrishnan 2022).

Sohini Kar, for instance, explores the relation between women and microfinance in India as an "example of the way in which the lives of those at the periphery are incorporated and shaped through finance capital" by turning credit to the poor as a new pool of abstract finance (2018, 3). Rather than a top-down imposition, she analyzes it as the result of multiple negotiations at various levels "through which financialization is experienced, accepted, and contested" (ibid.). Smitha Radhakrishnan (2022), also working in India, deepens these insights to demonstrate how microfinance practices are governed by gender and class relations and ingrained cultural hierarchies to the extreme that women, who are the specific subject designated to receive loans from these microcredit institutions, need men in their families (husbands, and even sons) to back their debts. Furthermore, she examines how the whole institution benefits lenders and not borrowers even as it is predicated as pro-poor or 'social' finance. As such, it is a site of extraction and expansion of financialization.

STS scholar Michelle Murphy, working in South Asia as well, brings another perspective to these issues by examining how the very life of preadolescent girls becomes the investable asset of venture philanthrocapitalism. The rationale for the objectification of girls as financial assets is that by preventing early pregnancies, these abstracted girls become the engine of development of their town and consequently, the narrative goes, of economic growth of their countries –a high return, considering the initial investment. Investing in a girl's education thus turns this "ticking time bomb of risk" into a "vessel of human capital" with promised positive effects trickling down into the whole economy of a nation (2013, 117).

My work takes this conversation to a different region, Latin America and particularly Perú, and from microfinance practices to financial inclusion. Financial inclusion can be understood as the ecology of practices (Stengers 2005) of one of the newest iterations of development as a "project system" (Li 2007). Tania Li's work in Indonesia casts light on the role that projects play in the flow of funds towards officials, politicians, and brokers of diverse kinds, including NGOs, which depend on them to exist. Projects, she explains, are "an ideal vehicle to disperse state and/or donor funds" because they "come with a budget, a limited set of goals, and a fixed end point; and when time and money are finished, they discretely fizzle out" often without anyone looking "too closely at whether the goals were actually achieved" (Li 2016). From this perspective, she observes, "the most strategic outcome from a project is to generate another project" (ibid.). Li's concept has traction to examine financialization processes in a country like Peru in which development as a 'project system' is deeply entrenched as well, for its own particular historical reasons beyond the scope of my account.

Development as a project-system in the form of financial inclusion consists of a global assembling "of subjects, technics, and rationalities" with the specific purported mission of developing "poor-appropriate financial products and services" (Scwhittay 2011, 381). The practices within this project-system assemblage are predicated upon the premise that more than a billion materially poor people "who do not currently have access to formal financial services are in need of such offerings" (Scwhittay 2011, 381). An absence (lack of access to financial services) is translated into a need (financial services), and to a development solution that consists of a "scalable model of poor-appropriate financial technologies" (such as basic mobile phones). To serve these large numbers of people grouped as 'the poor,' this scalable model could only be fulfilled "by tapping mainstream financial markets" (ibid, 383). In this way, mobile money enables and habilitates the inclusion of new constituencies in the formal financial circuits of banks: financial inclusion.

When international development representatives and Peruvian government officials (as well as their peers in other countries) talk about Financial Inclusion (FI), they often refer to it as a development proposal for individuals to have access to affordable financial products and services according to their needs (and not just microfinance). They also agree that their goal of FI starts by offering access to a transaction account as a gateway to other financial services (World Bank 2018). Their discourse is modeled within the networks of practices and policies sponsored by institutions such as the World Bank, the International Monetary Fund (IMF), and the United Nations (and its 'universal' development goals) and their long chains of development intermediaries. It is a dynamic process of ideas and projects in circulation and execution: local practices, including those of national governments, feed the international discussions oriented to standardize these same practices, in a continuous back and forth. As some of my interlocutors explained and I examine in detail in Chapter 1, within these networks and their knowledge practices, 'mobile money' came to be widely understood as a technology that creates transaction accounts for its users, allowing them to send and receive money through their basic cellphones without the need of internet access or a prior bank account.

One of development's feature practices is counting and organizing populations. In the case of the financial inclusion assemblage, the World Bank/IMF developed an international survey called the Global Findex (short for Financial Inclusion Index) to count people and inquire about their economic practices with or without banks' intermediation and including their use of cellphones.[5] Then they used the collected numbers to classify people and create categories of populations in need of interventions according to their metrics and standards: the 'unbanked.' Operationally, as witnessed during fieldwork and in the professional literature on it, this category seems to group people

[5] Started in 2011, and funded by the Gates Foundation, the Global Findex is the largest data set on how adults around the world save, borrow, make payments and manage risk, and is published every three years. Source: https://www.worldbank.org/en/publication/globalfindex

purportedly in need of financial inclusion, which is now possible via digital money facilitated through cellphones as transactional devices. But the category is telling: what these populations lack, unlike other lacks (say education, health, even money), is banks. There are no euphemisms or masquerades in what constitutes one of the key programs of post millennial development. Its goal is as clear as a commercial slogan: it aims at 'banking the unbanked.' As such, it shows in turn the extent to which the field of development itself has become financialized.

With microfinance, access to capital (in this case, money) in the form of credit or loans supposedly enabled the materially poor—who were, in theory, already empowered as microentrepreneur through various development practices and narratives—to improve their own living conditions without relying on the state or NGOs (Elyachar 2005). However, as has been extensively documented, microfinance does not necessarily improve the lives of the materially poor (Elyachar 2005; Roy 2010: Karim 2011, among others). As noted by Kar (2018, 18), "credit does not resolve the problem of lack; rather, it displaces it temporally."

The "mixed" results of microfinance, acknowledged not only by scholar critiques, but also by Nobel Prize economists (Banerjee and Duflo 2011) and even within the practitioner literature (Dileo and Ruisanchez 2020; Coetzee 2020), have not significantly redirected development interventions or the state welfare system towards providing the basic services that people lack and cover with the use of microloans (such as health care, education, housing). Instead, there has been a deepening and growing focus on financial aspects, to the point that a primary goal of financial inclusion as I was doing my research was to provide people with bank accounts using technologies such as mobile phones and mobile money.

Let me spell this out: a phone becomes the means, and a bank account becomes the goal of such development interventions. A bank account, rather than providing a solution to any of the basic

pressing needs of the materially poor (health care, housing, education, food security), merely offers a place to 'formally' store money that people already possess. This now 'banked money' can then be financialized by the banks and offered back to them or to others, shifting to each individual the responsibility to address structural problems that constrain their lives. Thus, the goal of financialized development seems to be to create ways to access to money that belongs to 'the poor' –who are also now 'microentrepreneurs' and who are mostly designed as women of color.

I understand financial inclusion practices as a new wave of financial *expansion practices* (or financialization) relying on the extraction of labor and capital from 'the poor' and particularly from women, a phenomenon observed through my research and which I address through different dimensions in the chapters of my dissertation. However, these processes do not go unchallenged and certainly they don't unfold as their proponents expect.

In my dissertation there is an arc, from Chapter 1 to 5, that moves from the most abstract representations of women who, in development narratives represent both the most excluded bodies and those with highest entrepreneurial potential, to the real merchants in the districts I walked with the Bim advisors. In other words, I first encountered women as representations of unbanked populations in the practices of the group that I have called the "high-level strategists." Secondly, women were also present as representations of users in the group of "technical implementers and mid-level managers" though at this level these abstractions were in clear tension—and constantly interfered by—the feedback brought to engineers by their "field collaborators" about the women merchants they encountered in their daily rounds promoting this new money technology. Lastly, I encountered real women merchants and their everyday monetary practices as I accompanied the field collaborators' practices. In Chapter 1, I look at the ways women are literally represented in modeling practices as cartoon characters. Chapter 2 zooms in on a picture of a woman that was used in the testing phase of the technology. In Chapters 4 and 5 I turn to the real merchants who negotiate,

engage with, circumvent, and carve a subsistence economy by creatively using all these new technologies designed to financialize them.

Financial inclusion: dispossession through 'empowerment'

I am now going to address financial inclusion building on what I just presented and connecting it with other dimensions, genealogies, and historical and social processes in its vicinity and through which it also unfolds. Particularly I will dwell on ideas of informality. Drawing on anthropologist Julia Elyachar –who draws on David Harvey—I understand financial inclusion, as a "process of incorporation" of formerly un-banked economies into formal banking networks that is "simultaneously a process of dispossession" (2005, 8). Elyachar studies the processes in Cairo during the 1990s that incorporated "the social practices of the poor into the free market," which accompanied neoliberal structural adjustments and left many people to fend for themselves without the jobs that the state used to provide. She traces how, in this context, networks of international development organizations and local NGOs reconfigured "the survival capacity of the working poor" into a sector of the economy – "the informal economy" (8).

As STS scholar Lilly Irani explains, the category of "the informal" marks those who labor "outside the organized sector, away from labor regulations and industrial zones where economists and policy makers had long focused their calculative attention" (2019, 38). The informal economy poses a problem for economists because its "activities take place in complex outsourcing chains and in gray areas of the law" (ibid.). But since the turn towards 'inclusion,' marked by the World Bank's introduction of the term 'inclusive growth' in the global development lexicon in the 2000s, "technocrats and business elites re-narrated the informal economy, long considered to lag behind the modern, organized sector, as a dynamic site of enterprise and innovation" (Ibid.). Informality becomes a potential for business; and poverty a site for capitalization (Roy 2010).

Social sciences contributed to these processes by conceptualizing the community resources and "networks of sociality and exchange" that made survival possible at the margins of wealthier and more formalized economic sectors as "social capital" (Elyachar 2005: 9). The 'working poor' were recast as 'micro-entrepreneurs' and their subsistence activities, previously "viewed as an obstacle to economic development," were now regarded as indispensable "for reproducing global markets, maintaining global stability, and achieving economic growth" (Ibid). At the level of street vendors, their economic subsistence activities (i.e., cooking and selling tamales, running a small bodega or shop, topping up cellphones, and so on) are recasted as *emprendimientos* (enterprise).[6] At the level of states and of international policies, there is a shift from poverty management to poverty as a site of investment, and of 'the poor' (at least the biopolitical category of 'working poor') as a population now expected to contribute to the economic growth of the country. "Entrepreneurial citizenship," a category that Irani develops in her research in India, "promises that citizens can construct markets, produce value, and do nation building all at the same time," and they can do so through entrepreneurship (2019, 2).

These were not only abstract, conceptual exercises, however. For instance, Elyachar traces the conjoined and intensive efforts of these entities as they recast debt for individual 'entrepreneurial' activities as empowerment (2005, 195) and persuade "people that they should embrace markets of dispossession" (10) which dispossessed them "from the power to decide what matters" (8). This affects the ways in which communities are organized and resources are exchanged, generating market indebtedness. My research examines a new moment in the waves of financialization interventions in which people are being dispossessed of control over their own money. That is, rather

[6] Lilly Irani describes for India the conflation of capitalists and the poor through entrepreneurship: "champions of entrepreneurship …attempted to manufacture a common sense that conflated the divergent interests of the poorer Indians -"the entrepreneurial poor"-- and high-tech entrepreneurs as being one and the same." In *Chasing Innovation*, p. 40

than losing control of money received via loans, they are being dispossessed of control over money that was already in their possession through their own economic practices.

Peru, like Egypt and India and many other countries, underwent neoliberal structural adjustments through the 1990s. These adjustments were accompanied by processes that viewed practices peripheral to the centers of power as 'informal' and as untapped markets for economic growth and accumulation among few hands through the dispossession of many. By the time of my fieldwork, with the advent of 'financial inclusion' and mobile money, these ways of understanding the economy and its participants ("entrepreneurs"), as well as the need to incorporate informal economies into the formal ones, have long been dominant ideas that international development, NGOs, and the state alike helped to invent and then systematically implement.

Thus, financial inclusion is in a way, a more recent type of inclusion experiment (as a shift from empowering the materially poor to emphasizing financialization), and it is also part of a later wave of formalization experiments. A first wave, in the nineties and early two-thousands, along with neoliberal structural adjustments, focused on the formalization of land property and businesses, without much success. This first wave was in part inspired by the work of the Peruvian economist Hernando de Soto, who wrote an influential book called *The Mystery of Capital: Why capitalism triumphs in the West and fails everywhere else*. The book, based on research and economic interventions he and his team did through the nineties in 'poor' countries in different regions, claimed that the mystery was not that the poor did not save money, or that "Third World" nations did not have resources, but that what they lacked was "the process to represent their property and create capital" (2000, 6).

Formalization as appropriate representation allowing things to become capital

De Soto calls “formalization” the process that attempts to “adequately” represent and integrate all assets "into one system so as to produce capital"(2000, 170). While he argues that “even in the poorest countries, the poor save," the problem is that "they hold these resources in defective forms: houses built on land whose ownership rights are not adequately recorded, unincorporated businesses with undefined liability, industries located where financiers and investors cannot see them” (6).

The problem of formalization (or the lack of) for him is then a problem of *adequate* representation: “by representing assets with titles, [people will be] able to see and draw out capital from them” (7). With proper representation (or “formalization”) “assets can lead an invisible, parallel life alongside their material existence”; they become collateral for credit, assets against investment, and in that way they generate capital (6). In this reasoning, there are physical things with inadequate representations which do not allow the things to become capital. And becoming capital means that the things can double themselves through processes of abstraction so they can also live a sort of independent immaterial, perhaps digital, life. This connects back to what Fernando was explaining to me with the example of the casino. E-money cannot have a double life, while money that is banked can: it allows banks to assign a secondary use to it—or to financialize it.

Continuing with De Soto’s ideas, the proposed solution is to provide the ‘adequate’ representation for them (or formalization) and by that he means the use of “inscription practices” (Latour 1987; Latour & Woolgar 1986) that generates a specific type of representation that is compliant with shared international standards and national records. It is a type of inscription that makes them readable across places and thus makes them accessible to finance (it makes them *financiabilizable,* finance-able).

In his book, however, De Soto mentions that in many countries, most programs to formalize property have failed and had minimal impact. For him, the problem resides in that countries try to apply "mandatory law" without respecting existing social contracts and arrangements. Taking what he calls "advanced nations" as a model, his argumentation, importantly, is also about the need of loosening these regulatory frameworks to ease the transition from "extralegal relations to unified formal property" (174). In his words: "the systematization of the laws that underpin modern property rights systems was possible only because authorities allowed preexisting extralegal relationships among groups on the ground sometimes to supersede official laws" (174).

In a way, I think, this is the principle that became operational in many formalization strategies across the 'developing' world, was the 'simplification' of business due processes in order to attract informal entrepreneurs. De Soto's ideas on how to formalize "the assets of the poor" –or how to adequately represent them- by 'flexibilizing' (*flexiblizando*) or loosening laws, which he presented as the result of his previous and ongoing economic research practices, became very popular and, in turn, guided further policy, research, and development practices in that direction around the world. Thus, what often gets 'simplified' (*simplificado*) are workers' labor protections. In short, political rights are 'simplified' in favor of market efficiencies. In Chapters 4 and 5, I trace what I call 'efficient informalities' in the ways in which bankers deploy their projects to formalize the unbanked, while flexibilizing (i.e., informalizing) the labor arrangements with their many third parties involved in the process, such as Bim advisers and shopkeepers as Bimmers.

The financial crisis of the invisible parallel life of 'formal' assets and the rise of mobile money and the unbanked

Continuing with my story of formalization processes, in the late two-thousands, however, assets of people in places such as the United States were, using De Soto's words, having a formal and

highly integrated "invisible, parallel life alongside their material existence" leading to a major housing and financial crisis and its concomitant liquidity shortages. At the same time, in other parts of the world, like Kenya, a mobile network operator or telecom company called Safaricom succeeded in creating a mobile money system (M-Pesa, in which M stands for mobile and Pesa is the Swahili word for money) which managed to attract hundreds of thousands of urban and rural users very rapidly. There, many people transformed their cash into digital tokens to send it to family or friends in other areas of the country. Most transactions were of very small amounts of money but grouped together they were mobilizing significant amounts of capital. Most of these users fell in the economists' categories of 'the poor' and the 'working poor,' which I have presented here and extensively discuss in Chapter 1.

In other words, the monetary practices of people in Kenya and in its neighboring countries to which this mobile money innovation spread quickly, revealed to economists, bankers, NGOs, international development officers and scholars alike that the poor not only saved money in, as De Soto calls them, "defective forms" like houses without clear land ownership titles, but also *as money*. Because the poor actually had money *in money form*, the attention turned to formalizing their money through financial inclusion.

Moreover, in Kenya, the poor not only had money in money form but they were representing it digitally through the pipes of telecoms (like M-Pesa) and not of banks, and, retrospectively viewed, that representation was not considered adequate by these experts, as it can be observed in the very simple empirical evidence of the language that organizations such as the World Bank and the International Monetary Fund coined to name these populations: the un-*banked*. What they lacked was not digital money but bank accounts. Thus, the representation that became dominantly considered adequate was that of banking and money as finance—as money that can be digitally broken down between actual money and its invisible life as capital, like De Soto proposes—and not of money as

communication/information flowing through telecom pipes—which could have a different quality perhaps just as cash in which its amount is the same in digital and physical representation and cannot have an independent invisible life as finance—. In short, and within these sets of practices and experts working closely with private banks, 'adequate' ways of saving and investing and of insurance needed to happen through 'formal' bank-led financial networks.

Drawing on these analytical frameworks, in sum, my dissertation explores the financialization of money, people, and development practices, as well as the practices that resist and circumvent these efforts while still 'informally' (not as clients) engaging with digital and banking services. My contribution is to ethnographically show how these processes unfold in practice, across different scales and contexts—from international development discussions to the universe of small neighborhood shops or bodegas. While my examination describes how experts address issues, find solutions, and manage daily practices in ways that distribute populations, roles, hierarchies, and the expected positions that different groups should occupy along the lines of the coloniality of current life structures in the country (Quijano 2001; De la Cadena 2008), my focus is on exploring the creativity—*el recurseo*—that emerges within these contexts.

I propose replacing the term "informality" with "recurseo," a colloquial term which comes from the noun *recurso* (resource) and is used in popular culture to refer to the act of being resourceful and the daily "resource-ing" that people engage in to survive and thrive. This involves a form of contextual cleverness and individual ingenuity in the face of lacking economic capital, generational wealth, or reliable networks. I suggest that *recurseo* provides a lens to better witness the unfolding of various collaborations aimed at making ends meet, using both cash and digital money, at the margins of more fully banked economies.

In other words, I follow the mechanisms, strategies, and tensions in the daily practices of different mobile money mediators (not only engineers, but also Bim advisors, and Bimmers) and how

they all circumvent, bypass, and operate within these social structures to ensure the project's success and make ends meet. Interestingly, we will also encounter what I term *corporate recurseo*—sets of practices that exist in the gray areas of legality as sorts of efficient (informal) shortcuts, through which banks and other entities manage their relatings with the constituencies they serve or seek to serve (and extract) at the peripheries.

A final note before proceeding: every successful piece of writing is a collective effort, and a completed dissertation is no exception. The following chapters are the product of the generosity of those who welcomed me during fieldwork and accompanied me on the various trips that constituted my research. They are also shaped by insightful conversations with colleagues and mentors, inspired by the work of others, and enriched by the feedback received on multiple iterations over time.[7] My dissertation owes much to this collaboration. However, any absences or inaccuracies are my sole responsibility. Like any piece of writing, it represents a partial vision. Furthermore, some aspects, perhaps central were left for future investigation —such as in-depth discussions on trust when examining money or expanding my analysis of 'informality'—, not because they lack importance, but because every dissertation is a work in progress, constrained by time and resources, and guided by the interests and curiosities that shaped more saliently my choices as its author.

[7] I am deeply grateful to Marie McDonald for her careful proofreading of this Introduction.

CHAPTER 1

The Gestation of Modelo Perú, the Rise of Mobile Money and the Unbanked

Introduction: Mobile money projects made into models for financializing "the poor"

During one of my first visits to the headquarters of Pagos Digitales Peruanos (Peruvian Digital Payments or PDP), in charge of deploying the *Billetera Móvil* (Mobile Wallet or Bim), I asked Carolina, its Managing Director, why was this mobile money project referred to as *Modelo Perú* (Peru Model) in its official Powerpoint presentations, and also in articles and Youtube videos circulating on the Internet.[8] She explained that "*Modelo Perú* is an invention of people seeing all Peruvian banks going together to international conferences and discussions."[9] These meetings were organized by what she called *la comunidad internacional,* the international community that she defined as "all those which had to do with telephones, financial inclusion and development" and she listed a bunch of organizations, among others: Consultative Group to Assist the Poor (CGAP), Bill and Melinda Gates Foundation, Better than Cash Alliance, Alliance for Financial Inclusion (AFI), World Bank, USAID, Inter-American Development Bank (IDB), Global System for Mobile Communications Association (GSMA), and the International Telecommunication Union (ITU).[10]

Carolina mentioned that, back in 2014, the interest in common in these conferences was to think about financial inclusion 'solutions' and share 'experiences' oriented to transitioning from cash to digital payments and reducing poverty. Interestingly, in the first decade of the 2000s, and still until the mid-2010s, associations of banks did not prominently feature in the international community.

[8] I visited PDP also in July and August 2015, in a preliminary fieldwork trip.
[9] If not otherwise noted, the quotes and references to Carolina refer to a conversation we had on January 4th, 2017.
[10] Conversation with Carolina in January 2020.

Instead, organizations from the telecommunication sector (like GSMA and ITU) were more central—though banks were increasingly interested in these conversations. As Carolina mentioned, the focus was more on 'telephones' and how they could be used for development and financial inclusion, rather on 'banking the unbanked'—the trend that became dominant and that my research follows. In these spaces, "everyone referred to the Peruvian mobile money project as 'the Peruvians that are doing this unique model together' or 'the Peru Model,' so it just stayed like that." Several characteristics distinguished this project among others attending what she described as "these big global spaces of the world of social development policy-making."

For instance, unlike other mobile money platforms that were run by a single telecom (like Kenya's M-Pesa) or a bank (like Bangladesh's BKash) under near-monopoly conditions, the Peruvian mobile money project was organized as a "collaboration among competitors." The associated Peruvian banks managed to bring together more than twenty-five financial institutions to plan and build a single interoperable mobile money platform for all. Not only that, but the project was also presented by its spokespersons, including Carolina, as an altruistic initiative—a contribution to financial inclusion, a social development goal set by the state. With Carolina's help, as the former Minister of Inclusion in the country, the bankers organized this initiative not only in close collaboration with each other but also with the state.

At the time, financial inclusion was becoming the new dominant discourse and hype term, displacing (or subsuming) that of microfinance, within these communities of experts, who were more and more closely working with banks and less with traditional NGOs, and more and more thinking in terms of banking. For example, according to CGAP –one of the institutions of the *comunidad internacional* that Carolina mentioned—, financial inclusion is a policy paradigm for global development which stipulates that a bank account is the "first brick for a better future" (2014).

Riding (and pushing) the wave of financial inclusion, the Peruvian bankers envisaged their project as an opportunity to create a national mobile payments system that could expand their financial services to 70% of Peruvians that in the early 2010s didn't have bank accounts but did have access to basic cellphones, as per the statistics that circulated in these global spaces.[11] These individuals had not previously been of significant interest to the banking industry in Peru or elsewhere. But this was a time after post 2008 financial crisis, and transforming the cellphone into a mobile wallet had the potential to expand the banks' market to those that were not yet their clients – the so-called excluded from financial services, to use the social development lingo.

Carolina told me that people attending these conferences where she presented the Peruvian mobile money project, started calling it a model (the Peru Model) precisely because of this mix of a collaborative effort of the commercial banks aiming at financial inclusion. In her view, with perhaps a bit of wishful thinking if you ask me, the bankers were betting on postponing immediate profits for the promise of future growth. But also she added that, in the meantime, this mobile money project allowed banks to learn about these populations' behaviors and create financial services (microloans, insurance) tailored to their needs. Thus, while Modelo Perú didn't represent short-term monetary profitability, the real profit lay on the data it would generate, yielding new knowledge out of these previously unknown constituencies.

Moreover, there is another characteristic that distinguished Modelo Perú from other mobile money platforms participating in these spaces of global development. In 2014, the time that Carolina is recalling, Modelo Peru was still a *project*, not yet launched as a mobile money *platform* so there was no money circulating through it, nor users doing transactions with it, unlike, for instance, M-Pesa (launched in 2007) or BKash (2011). The latter two were, by then, widespread mobile money

[11] Global Findex 2011 and 2014.

platforms, with millions of users in their countries. In contrast, Modelo Peru was a very well-traveled and well-known project internationally, and totally unheard of in Peru beyond the experts –a mix of bankers, engineers, development practitioners, lawyers, and bureaucrats- engaged in its design. This is also how I personally learned about Modelo Peru: through English-written articles in The Guardian and in the Better than Cash Alliance online sites and through directly contacting its experts rather than through word of mouth and daily use in Peru. These contrasts and the layered modes of existence of Modelo Perú were what initially captivated my attention and sparked my curiosity to study it.

This chapter takes the very active social life and international supporters this project had long before it was commercially launched (2016) –or even built as an actual mobile money platform—as the starting point to inquire about networks of financial development modeling practices in which Modelo Peru participates. More than being about Modelo Peru itself, the chapter is about the practices and intimacies that generated the conditions of possibility for its existence.

Modelo Peru was gestated and incubated through meetings in the offices of the Peruvian Association of Banks, and of the Ministries of Finance and Social Development, through the back-and-forth of documents and emails with regulators (the Central Bank) and state supervisors (the Bank Superintendency), in the drafting of contracts with telecom partners, and in a few training and testing activities with what its promoters categorized as 'rural' and 'working poor' or 'micro-entrepreneurial' women in the Andes region of the country (see Chapter 2 on that). As Carolina recalls, Modelo Peru was also shaped in these global summits where technocrats, bankers, and development practitioners from different countries were on a permanent search for ideas to improve the poor's access to finance and where "the discussion of these models started."

Drawing on sociologist of science and technology Bruno Latour, my chapter follows the "assemblies of spokespersons" that this project brought together and who in turn, gathered at

multiple meetings, bringing different worlds to a single table (1996: 43). It is because Modelo Perú gathered around bankers, international consultants, government officials and regulators, finance and social development ministers, telecommunication companies and other information technology developers, who translated "the divergent interests of their constituents, and because they meet together nevertheless," that this project gained "enough certainty, enough confidence, enough enthusiasm to be transformed from paper to prototype" and, later, into a mobile money infrastructure (1996: 43).

In the chapter I think with infrastructures as emergent ontologies; as becomings that exist but are not objects (Brunn Jensen and Morita 2016; Winthereik and Brunn Jensen 2017). Viewing infrastructures as emergent ontologies, allows me to consider the different modes of existence of Modelo Peru—whether as ideas taking shape setting the conditions of possibility for this project to arise, as an actual project, as prototypes, or as something not yet a transactional infrastructure. These becomings, I argue, model imagination; even if they don't materialize into objects and worlds that we inhabit (e.g., smartphones as environments in which part of our contemporary lives are lived), what they teach us is about the process of becoming—what might have been, what could have happened, and the kinds of futures that are prioritized or discarded through these modeling processes.

Projects and platforms for mobile-izing money; models for financializing populations

Carolina tells me that M-Pesa and BKash's spokespersons brought *numeritos* (little numbers, data) to these global conferences where technocrats, bankers and development practitioners of different countries were on constant search for ideas to improve the poor's access to finance. The *numeritos* (in the form of Powerpoint presentations, spreadsheets, pdfs, images, flowcharts) were

representations of past action and performance, they translated the daily functioning of local mobile money infrastructures in Kenya and Bangladesh into technical information and indicators of economic success. Modelo Peru also had *numeritos* (for instance, to have five million active users after five years) but these were pure proposition, an imagination of a future for money and users in Peru.

In short, Modelo Peru stepped into the international conversation before being an actual mobile money platform, without any "tuberías" or pipelines built; "pipes" being the metaphor used by mobile money professionals, including those working on Modelo Perú, to refer to the technical and legal infrastructure for money's circulation through phones (Donovan 2012). In Carolina's words "we were bringing a proposal and they [M-Pesa, BCash, among others] were bringing the knowledge of the ongoing experience" [Nosotros veníamos con una propuesta y ellos eran la experiencia en marcha]. Carolina recalled that she presented Modelo Peru with "a very nice [bien bonita] PPT presentation about the model with a little bit of history and a little bit of goals and ideas depending on the audience". She added that "it was an institutional presentation of the project full of graphs and charts," meaning that the presentation was using a similar technocratic language than other presentations on those spaces, "but the heart of it was the message that this project can be transformative" [pero con un corazoncito de que esto puede ser transformador].

In other words, at the time of these international meetings, the only materiality of the Peru Model time was its design process. Modelo Peru didn't have any infrastructure other than its Powerpoint presentations, documents, spreadsheets, charts and the humans (a mix of IT engineers, bankers, international consultants, and technocrats like Carolina) talking about it, and sharing their excitement and trust on their proposal while attending meetings to present their proposal and learn from other mobile money examples.

Modelo Peru's data was pure potential, and yet, through these international venues and their knowledge-making and dissemination practices, it was becoming a model for digitizing cash and financializing the poor. For instance, the Peruvian Association of Banks, which proposed the Peru Model, worked closely with Better than Cash Alliance. Consultants from this international organization, based in the United Nations headquarters, provided technical support for the initiative.[12] They, along with Carolina, also facilitated the translation of Modelo Peru into English, which helped it travel further and gain broader international reach. One such consultant was Jeffrey, who frequently presented this initiative to international audiences. In his words, the center and the innovation of Modelo Peru, was that financial institutions and e-money issuers that are used to compete with each other were coming together to share both resources and risks in creating a "shared platform, a shared brand, a shared product, a shared fee structure and a shared agent network combined to form a program that gives customers a simple product that is available nationwide, it provides the government a solution that advances their vision [financial inclusion], and leaves [e-money] issuers and financial institutions with an innovation that they are able to build upon."[13]

When I think about this mode of existence of Modelo Peru, I cannot help but think of Aramis, the French automated train system that Latour (1996) examines, as the materiality of the Peru Model at the time of these discussions was only that of a design process. Modelo Peru *was* its documents, prototype sketches, diagrams and the group of people who were going together to these meetings and, paraphrasing Carolina, *were putting their hearts in it*. For Latour, "by definition, a technological project is a fiction, since at the outset it does not exist, and there is no way it can exist

[12] I return to Better than Cash Alliance's discourse and practices in Chapter 2 and, especially in Chapter 3.
[13] Jeffrey, Webinar on Modelo Peru BTCA April 2016

yet because it is in the project phase" (1996: 23). As technological projects involve invention, paraphrasing Latour, they thus involve the work of *fictioning.*[14]

Modelo Peru at the time of these discussions was in the project phase, it was pure fiction, while M-Pesa and Bcash were both mobile money platforms and working models (Haraway 2016) from which to design futures for money and for the poor. In Carolina's words, M-Pesa and BKash were *case studies* or "*examples* from which to extract lessons about the poor and their management of money" and from which to borrow and improve technical features to better serve them. However, she continues, "they [M-Pesa, BCash, among others] are businesses (empresas), so they don't share anything. Empresas are like that, they never give you their data or any document, not even their PPT, so there you go and take a picture to the numeritos in the PPT". The numeritos of M-Pesa and BKash were not speculative, they were the numbers of a running and profitable business. Thus, they were also money and valuable knowledge in how to financialize new populations, and *empresas* were very protective of them.

This first chapter explores the difference between what I call speculative models, like Modelo Peru, and models grounded in case studies of existing technological infrastructure, like M-Pesa. I examine the global assemblages (Collier and Ong 2005) and the conditions of possibility that allowed for the Peruvian mobile money project to become, even if for a short period of time, a *speculative model* to help those involved in these discussions see what the future of money could look like. Drawing on Science and Technology Studies (STS) discussions about biological models (Haraway 2016; Myers 2015), economic modeling (Callon 1998; Mackenzie 2008; Murphy 2017) and prototyping practices (Latour 1996; Suchman 2011; Corsín Jiménez 2014), I conceptualize speculative model as a work object that operates at the level of planning and designing collective

[14] The destinies of Modelo Peru and Aramis were different though, Modelo Peru became an actual mobile platform called Bim, while Aramis never changed its mode of existence from technological project into an actual train system.

dreams, through collections of presentations, conversations, reports and documents that make the logics of something that doesn't yet exist, but it is becoming. Speculative models work precisely by the gathering of people (and their tools and material practices) who think together and imagine the world in such a way that they change the world, even if the pipes are not yet built (Latour 1996). Understood as practice and grounded into a particular (even if decentered) place, time and community of experts, models are also *worldings*, in the sense that they are worked through certain kinds of worlds (to answer particular questions and no others) and in turn work for the emergence of specific kinds of worlds (Haraway 2016).

In this chapter I distinguish between *descriptive models* of a situation that was already happening and had its legal, technical and financial infrastructures in place (like M-Pesa and BKash), and *speculative models* (Modelo Peru). I don't reify this difference; rather I use it for analytical purposes to facilitate description. All models are a mix of fabulation and fact (Myers 2015), and both descriptive and speculative models participate in these international discussions and prototyping practices helping these experts to envision what the future of money could look like. This distinction directs attention to the performative 'nature' of these models, which implies that they are impermanent and mutable (Callon 1998; Mackenzie 2008). In modeling practices, temporality matters: what was a text *progressively* becomes a thing (Latour 1996: 25). For a fiction to gain reality, it depends on the prototype succeeding in becoming the dream not only of its proponents but shared by different groups that will make it evolve into an object. This happens through chains of translations –that define obligatory passage points (Callon 1986)—and through material practices and encounters.

For instance, the Peru Model could not exist without M-Pesa, Bkash and other previous iterations of mobile money and the descriptive models they produced. In fact, Modelo Perú choses and discards features from these models to propose its own innovation: to bond right from the start a

financial technology (mobile money) to a development goal (financial inclusion –which in itself was solidified by previous mobile money iterations such as these), and to do so under the control of the associated banks (instead of telecoms).

By the same token, the Peru Model works as a speculative model only for some time; once its 'pipes' are built in 2016 and Modelo Peru becomes (or rather adds another layer of materiality as) Billetera Movil (Bim) –a physical infrastructure for mobile money in a particular place, enabled by a local regulatory framework and state supervision mechanisms-, it morphs into one more case study, another local example to display in these international meetings. It becomes, in these discussions, a descriptive model of the financialization of the poor via mobile money, which in turn provides its own lessons learned for the new digital financial services to come.[15] Ultimately, my argument is that these prototyping practices not only model mobile money technologies (that is new digital "pipes" for money circulation), but that they model the imagination of possible futures for money and for the people they conceived attached to it (in this case, "the poor").

The chapter is based on a series of conversations with different experts, most of them, if not all, economists. The chapter is organized mostly by following anecdotes and recollections told by one of them, Carolina, PDP Managing Director and former Minister of Inclusion. Her anecdotes connect events, people and institutions from all over, like the issuing of the e-money law in Peru in which she participated as a Minister, and the M-Pesa mobile money deployment in Kenya that she visited when designing Modelo Perú. She also talks about specific people and institutions discussing mobile money and financial inclusion models (what she refers as *la comunidad internacional)* such as the former World Bank President, Jim Yong Kim, and Christine Lagarde, the managing director of the International Monetary Fund, and the Consultative Group to Assist the Poor (CGAP).

[15] Yet, models can loop back from the materialities (policies and concrete infrastructures) they create and become again models for something else (Haraway 2016).

By following these anecdotes and the threads she introduces in them, the chapter situates the Peruvian mobile money in a wider network of mobile money projects, experts, and their knowledge exchanges and modeling/prototyping practices. I suggest that these expert networks translate local mobile money *technological projects* into a *development model* for financializing 'the poor.' Put differently, an infrastructure for the circulation of money is also worked, at another level, by this set of experts, as an infrastructure to produce knowledge. In that sense, I describe the practices through which mobile money (a technological innovation) becomes an enabler of a development paradigm shift from microfinance to financial inclusion which works by, in turn, reconceptualizing 'the poor' into 'the unbanked.'

I argue that alongside the technology designed to convert previously unbanked money in cash form into digital banked money through the pipelines of telecoms and banks, Modelo Perú is also modeling a population. It reconfigures constituencies that have been studied and intervened in relation to their poverty— which in itself has been defined and measured by similar expert practices—by redefining them in terms of their relation to banking practices. The 'working poor,' already conceptualized as 'entrepreneurs,' or, in the Peruvian context as a 'micro entrepreneurs,' and classified as 'informal' (in relation to state and corporation knowledge practices and tools which these institutions consider 'formal' and through these constituencies cannot be read), are now also labeled as 'unbanked.' In this way, their economic activities, are cast as entrepreneurial rather than as creative subsistence ones, and needing formalization in terms of banking, and credit to grow.

The prime time of financial inclusion

Carolina is in her mid-fifties and speaks fast and to the point. Although very friendly and with a broad smile, she has a sharp eye gaze that could be intimidating. She is an economist, with a masters from a prestigious U.S. University, a microcredit expert, and a researcher specialized in social policy in topics such as rural poverty, financial inclusion, and rural development. Because of this background, and perhaps also because she is a woman, she became under Ollanta Humala's government (2011- 2016) the first Development of Inclusion minister of Peru, a position she occupied from 2011 to 2013[16]. The bankers at the Peruvian Association of Banks invited her in the beginning of 2014, to run their mobile money project precisely because of how she exposed her capacity to bridge the worlds of social development and state policymaking to the world of finances.

The metaphor of a bridge serves well here, as I noticed that in our conversations, Carolina would refer to the bankers, the telecom and bank corporations (*empresas*) and even the state bureaucrats as different than her. Even while she was occupying the position of general director of Modelo Peru, she never thought of herself as a banker. Likewise, even though she was for some time the first ever appointed state minister of Inclusion, she never grouped herself with the bureaucrats. In fact, she would 'other' herself from all of them: the bankers, the telecom people, the central bankers, Peruvian or international.

When I asked her about the profiles of other people attending the conferences where the Peruvian bankers' mobile money project became known as Modelo Peru, she replied "yo era la rara siempre" (I was always the odd/different/unusual one). She explained that she was *la rara* because

[16] The Inclusion Ministry was created by former President Ollanta Humala in October 2011. Carolina was the first person occupying the position of Minister, thanks to her work as a financial inclusion and microfinances researcher and published author for an important think tank in Peru, and who advocated for and run pilot studies on financial inclusion in rural regions in Peru.

"the others were central bankers, or people from the telecom world, or NGOs, or businesses, most of them were practitioners." If they were practitioners, what was she? She saw herself more as an academic—a researcher from one of the most prominent think tanks in Peru—and a published author in micro-economics and rural development topics. This think tank was her base, and for some years, it was mine as well. Before pursuing my Ph.D. abroad, I worked there as a social development project manager and junior researcher. That is how I initially met Carolina, who was already an established researcher and general director of that institution when I started. Thanks to this personal connection and her generosity, I was able to access this mobile money project years later. The think tank, which operated mostly through grants brought in by its researchers, provided her (and many others) with the flexibility to momentarily move into other positions and then return.

As she saw herself as, in my words, a practitioner of a different craft than running a business, Carolina left the post of Modelo Peru's general director not long after it transitioned from a project to a business and an operational mobile money platform. As she explained to me, as a business, it required a set of skills she didn't have. Her skills, as an economist, worked for Modelo Peru as a becoming—as a technology that had the heart and the potential to be transformative for the most excluded in the country, as a model to imagine financial futures for these constituencies. She was there, it seems, to help the bankers understand how the economies at the margins of the most banked ones worked. At the project stage, Modelo Peru was primarily an infrastructure for producing knowledge, not yet also an infrastructure for circulating money. Carolina had all the credentials that made her well suited for the project and prototyping phase: a proven track record as a researcher and as a prior minister committed to financial inclusion, a familiarity with global development policies and practices, along with her 'outsider' profile (not a practitioner).[17] Bankers expected her to bring an

[17] Microfinance practitioners from the eighties and nineties, working in NGOs based in Lima, with whom I had conversations in the field, shared Carolina's impression on her not being a practitioner. For them, she was involved from the academic side and as a consultant, or as they said, air quoting: *desde 'afuera'* (from the 'outside').

intimate knowledge—resulting from previous research, interventions and economic development experiments—of the populations they were trying to attract.

In this section, I recount a conversation with Carolina about her professional trajectory before she became the general director of the bankers' mobile money project Modelo Perú, as it is deeply connected with how mobile money happened –and what it *is*- in Peru, as well as to the 'global spaces' discussing mobile money models, and how these spaces turned a technology for money into a model for financializing the poor.

Micro-finance institutions and the micro-credit for micro-entrepreneurs

In one of our conversations, I asked Carolina about her trajectory working on financial inclusion endeavors. She told me that she started advocating for financial inclusion before being a state official, *cuando era mi proyectito* (when it was my little project).[18] She mentioned that she attended many events "at the beginnings of the movement away from talking about microfinance to talking about financial inclusion." I wondered who does this talking that is shifting from a set of practices to another. She also mentioned that before microfinance, there was microcredit. For decades, development agencies and local NGOs focused on microcredit strategies, that is, the provision of small loans, as the primary means of economic development for those that they classified as poor.

I kept listening while noticing that she assumed that I understood and followed this progression: microcredit → microfinance → financial inclusion. Perhaps because I have been a development practitioner too in rural Peru, but on projects about a different technology than finances

[18] Unless noted, all the quotes and references to Carolina in this section come from a conversation we had on January 4th, 2017.

(information/connectivity), I also noted that she, to some extent, considers me part of her "we," – until I asked her a question that stunned her. I said, 'What does the word *micro* mean in microfinance?'

She takes her time, states that it is a good question, and I can see that she has never thought about it. The use of the 'micro' prefix in credit started, according to Carolina, in the eighties, with the first successes of credit initiatives that provided small amount loans (thus 'microcredits') to the poor. When I read about this, the official origin story of the term microcredit usually goes to the Grameen Bank in Bangladesh, founded in 1983 by Muhammad Yunus, an Economics PhD and professor at the University of Chittagong. However, I found that when I asked Peruvian former microcredit practitioners about microcredit, they would speak about their microloan experiments in Peru, and they would also refer to other experiences in the Latin American region during the 1980s rather than mentioning directly Yunus or the Grameen Bank.[19] Returning to Carolina, she told me that these initiatives proved that it was possible to do 'finances' which, she specified, meant in this case 'lending to the poor', and that these microcredit businesses could be sustainable. She also specified 'the poor' as 'clients who would only require small amounts of money.'

Microcredit then expanded to what its practitioners and researchers like Carolina call 'microfinance' (i.e. adding micro- insurance and savings services to their microloans strategies and experiments). However, most of the microfinance work was still focused on microcredit. The moving away from microfinance to talk about financial inclusion that Carolina mentions is a crucial aspect of

[19] Sociologist Eduardo Ballón mentioned that the experience of the Grameen Bank was highly regarded from the late 1980s by Peruvian research-oriented NGOs such as CEPES (with figures such as Fernando Eguren, Javier Alvarado, Juan Rheineck) and by INPET (creators of one of the first EDPYMES), leading to many publications and debates. The Peru-Canada Countervalue Fund dedicated significant funds to financing microcredit initiatives that involved NGOs such as DESCO, CIPCA, ARARIWA, and others throughout the country. Personal conversation, April 2021.

this chapter, and to understand it, I'm taking here a step back from this conversation to first delve deeper into how development practitioners understand microcredit.

The development narrative of microcredit, according to economic anthropologists Sohini Kar and Caroline Schuster "centers on two key ideas: First, that with access to credit, the poor will be able to increase their incomes through entrepreneurial activity; and second, that the reason they are excluded from the formal financial system is due to the lack of material collateral against which banks offer loans" (2016: 347). In other words, because of their lack of collateral legible to the formal banking system, that is, in the form of houses or other property, both the banking industry and the state considered that the poor were 'unbankable,' this is their term, not mine. They are 'unbankable' or not bankable not because they do not use banks; the term speaks more of the lack of interest or willingness of the banking industry to invest in this kind of population. For these unbankable constituencies –who may rely on other forms of lending which are beyond the scope of this chapter-, local NGOs and microfinance institutions (MFIs) in Peru and around the world, designed microcredit programs and projects.

A cofounder of the Consultative Group to Assist the Poor (CGAP) and co-editor of a recent book in which microfinance experts explore the future of this field, who I will call Ezra, explained to me over email that microfinance "started as a way to provide credit, loans, to micro entrepreneurs". He added:

> So for example a woman selling good in a market could finance inventory. These loans were of short duration a year or less, repaid in regular installments, normally weekly, without collateral, and initially through solidarity groups with group members guaranteeing each other's loans. As such Microfinance refers to a specific technology of lending and payment collection to support the very poor. But these

> poor have a way to repay their loans through their micro business. The micro business is often defined as a family style business as it supports the family unit[20].

The innovation that became the signature feature of microcredit was 'social collateral' (or in Spanish, *garantía social*). As Ezra mentioned, social collateral usually "takes the form of borrowers establishing groups, guaranteeing loans for each other, and exerting peer pressure for loan recovery in place of typical forms of collateral" like houses or other forms of property, required by banks (Kar and Schuster, 2016: 347). Adopted globally by Microfinance Institutions (MFIs) and microcredit NGOs, this development model (social collateral through group lending) had a companion rhetoric of "economic and social empowerment, particularly for women" to justify its practices (ibid). It is no coincidence then that women constitute most of these groups of borrowers. Women and not any kind of 'poor women,' but the ones that MFIs and NGOs classified as micro-entrepreneurial ones. Put differently, the process of devising a development framework (microcredit) also designed a (micro) subject for it: the 'female entrepreneurial poor', a topic to which I will return in chapter 2 and 5. As seen in box 1 below, the female entrepreneurial poor is not only expected to be found 'out-there' by these MFIs and NGOs, and later by banks (like with Modelo Perú), but also intervened and shaped as such since early childhood with other development initiatives (see for instance, Murphy 2012, 2017).

BOX 1. Vilma wants to be well

In 2012, while Carolina was the minister, the Ministry of Inclusion released an institutional spot called "Vilma Wants to Be Well". Here is an excerpt of the voice-over narration: "(…) Vilma is a smart girl with all the potential [capacidad] to do great things for herself and her country. Unfortunately, Vilma's family is living in extreme poverty. Vilma is at risk of having a childhood with poor nutrition and psychological

[20] Email exchange with Ezra on 07/13/2020.

preparation, which will leave her at a disadvantage for life. Vilma is a Peruvian excluded from her right to compete on equal terms. This is where MIDIS steps in with programs such as *Cuna Más* [Better Crib], to support her and her mother, closely monitor her nutrition and early development. If Vilma gets the chance, she could break the cycle of poverty and contribute to national development. She has the potential. Vilma wants to be well. We all want to be well. Ministry of Development and Social Inclusion" (my translation and underlining).



Figure 1.1. Frames selection of the televised spot. Source: http://www.youtube.com/watch?v=CR4CFlXo70w (last accessed 07/13/2020)

The spot uses animated characters instead of real people. In the spot, women –Vilma and her mother- are the main subjects of the State's interventions, the visible faces of social and financial exclusion. Their skin is brown, their hair is black (braided in the case of the mother), and their clothes are simple. In the Peruvian imaginary, historically spread by its centers of power, these are representations of Andean rural poor people. The third woman in the spot, who is lighter skinned than Vilma and her mother, represents state monitoring. She is portrayed as a benevolent observer, standing peacefully next to them, yet she has a notebook and a pen—signs of higher literacy than the other characters—and is ready to evaluate both the mother and the little girl. While poverty is racialized and ruralized and grounded in gendered bodies as female, in a different frame of the spot development is literally drawn as a stairway with specific steps, the same for everyone, that the poor must ascent with the State's help.

In the spot, "exclusion" is depicted in terms of economic productivity, as being excluded from the country's economic activities and from the right to compete in equal conditions. Poverty is presented as an individual problem. The role of the state is to help individuals break their own poverty cycles by the

promise of providing childcare, mandatory health checks, better nutrition, and conditional cash transfers. The idea is that if individuals can break free from poverty, they will not only be able to explore and expand their own capacities (to compete in the market system) but also contribute to national development (i.e., economic growth). The value of individuals is framed in relation to how functional and productive they are for the market economy, as their actions (or lack of) impact the country's economic growth.

By the end of the 2000s, as Carolina recalls, microcredit practitioners and researchers were on the lookout for innovation beyond the issue of microlending to the poor. She is not alone in this perception. Trying to understand why these experts were embarked on this search, I spoke with Shane, an Economics professor at a prestigious private college in the U.S. East Coast, and former microfinance practitioner who worked in the economic transition from Soviet Union to Russia's open market. He introduced me to Ezra, who I just quoted. I lived in the east coast for some time when I first returned from my long-term fieldwork in 2018 and through personal connections, I got invited to present my work in Shane's *Access to Finance* class for Economics majors at that college. Since then and for some time, he became one of my research interlocutors, a challenging one because he was very open to listening to my ideas, even to reading and commenting on my drafts. Also, he was never quite sure what I was talking about. He would keep stating, "I'm still not sure what is your research question, what is it that you are trying to find out".

My research and I were not legible within his Economics frameworks. I was trying to examine modeling processes, and my questions were too open-ended, I guess. I certainly didn't have an *if A then B* kind of hypothesis. He told me that economists tend to focus on models, "as simplified descriptions of how the world works" rather than on language. I had a similar experience with Ezra, the cofounder of CGAP, an economist as well, and a microfinance expert. He was also very open to

reading drafts, sharing his work, and promptly answering my questions in detail. Yet, he was sometimes very frustrated with my use of words and my critical perspective on these interventions and the professionalized literature. For instance, he couldn't understand why I would use a "made-up" word like 'financializing' instead of simply 'financing the poor,' which, in his words "is what microfinance is and financial inclusion hopes to extend." When I quoted historian Michelle Murphy's "economization" of life (2017), he went all caps: "WHAT DOES THIS TERM MEAN OR PROPORT TO MEAN?"[21] But still, a generous conversation with both was possible.

Shane remembers attending conferences back in 2010, and sensing, like Carolina, this movement away from the use of the term microcredit, and even microfinance, that she refers to. He commented to me that "microfinance had been considered a tool to achieve poverty eradication, then less demandingly, poverty alleviation."[22] He explained that there was "data coming in that was bringing into question the ability of this tool to achieve the goal of even poverty alleviation," and "the industry was really wrestling with what it should be trying to do."[23] He called it an industry, and I will comment on that soon. Continuing with his argument, while microcredit's impact in poverty alleviation had mixed and contradictory results, it was becoming apparent for its practitioners and researchers that there was, in Shane's words "demand, and potentially wider 'impact' for savings and payment services for the poor." However, as he added, "while development advocates could talk more broadly about microfinance and then financial inclusion (vs. microcredit), until mobile money, there was no similar innovation that made offering these other products 'sustainable'". Shane used quotation marks for 'sustainable' here, because its meaning for bankers is not the same as for policy makers and development practitioners. For the latter, it refers generally to the long-term viability of a

[21] Ezra's comments on a dissertation writing proposal draft, December 13, 2019.
[22] Ezra also commented on these enthusiastic initial goals among global development agencies and MFIs and NGOs: "We know that microfinance can smooth income flows and prevent poor people from falling into deeper poverty. One must use an array of instruments to address poverty." December 13, 2019.
[23] Correspondence with Shane over a prior version of this chapter.

community, the ability to maintain ecological balance and the avoidance of the depletion of natural resources. When bankers use it, it means "profitable".

Carolina commented that this situation (mixed results of microfinance, an idea of demand for the services but lack of appropriate tools to make inclusion 'sustainable') started to change when some of the first mobile money platforms such as the Kenyan M-Pesa (launched in 2007) or the Bangladeshi BKash (2011), succeeded in making cash accessible through cellphones to people living in rural or in low-income areas, often under- and unserved by banks, and I return to this later in the chapter. For experts like Carolina and Shane, these mobile money initiatives showed that the cellphone could effectively be the technological means to reach 'the poor' to offer diverse financial services –and not only microloans. Also, the money circulating through the digital 'pipes' of M-Pesa and BKash was, through that circulation, producing data about the money that 'the poor' had and how they used it. This data signaled for these experts that in Kenya and in Bangladesh the use of cellphones for money operations could potentially effect 'financial inclusion.'

Put it differently, these experts had the supply side ready—financial inclusion as the new solution replacing microfinance—because they had evidence that microfinance alone would neither eradicate poverty nor even alleviate it. They were waiting to find a technology to make it work, as well as a way to create (or design) evidence of a need for it. This is a common practice in development. For instance, Michelle Murphy, elaborating on Ravenholt and Gillespie (1976) ideas, defines family planning in the 1970s as a development project in which a need or demand follows supply and not the other way around (2017: 148). Murphy details how in Bangladesh, during family planning surveys, surveyors would go house by house offering contraceptive methods as gifts and explained how they worked. In very practical terms, they were introducing the products they were supposedly surveying demand for and expecting to generate demand in this way. With financial inclusion, it seems like development practitioners had the concept ready but not yet the means to put

it to work. Bringing Shane's words back here: there was an *industry* wrestling with what it should be trying to do. That is, an industry of MFIs and bankers thinking what to sell and how to better sell their microfinance products and expand them under the concept of financial inclusion. Mobile money provided both: a promising technical tool for financializing 'the poor' while working also as a digital data collection instrument. Money and users' data could be now tracked down more directly than with other quantitative methods like surveys that often accompany development projects, when economies are primarily cash-based.

With mobile money's data, populations that were until then considered 'unbankable' –within these international networks of economists, bankers and social development practitioners, started to be seen as potentially 'bankable' (or 'not yet banked') and prime for inclusion in the 'formal economy' through the financial circuit of banks. This is why development agencies often cite 'mobile money' as the agent of a paradigm shift from microfinance schemes to financial inclusion, an issue I will discuss soon. It is important to note here though, the practitioners' wordings for these changes: the *unbankable* were becoming the *not yet banked*; they were always thought within the banking imagination and network of banks. They did not become something like the 'financeable beyond the bank', or the 'financeable with the bank playing a different role.'

The Peruvian mobile money law as a tool for financial inclusion

By the time Carolina was appointed head of the Inclusion ministry in Peru (2011), mobile money had already appeared in the international scene (*la comunidad internacional*), with examples such as M-Pesa and BKash among others, giving traction to other local mobile money-financial inclusion initiatives. As she commented, "when I became a minister, I pushed the financial inclusion issue a lot, which worked well because it connected with some initiatives that *la super* [the banking and insurance Superintendency] had underway." She goes on, connecting local politics with

international trends: “around that time for example, the Better Than Cash Alliance was being created and they asked me if Peru wanted to be one of the founding countries.”

The Better Than Cash Alliance is, according to its website, “a partnership of governments, companies and international organizations that accelerates the transition from cash to digital payments to advance the [UN] Sustainable Development Goals.” [24] It is based at the United Nations and has over seventy five members, which are grouped under four categories: governments (including Perú, Bangladesh and Kenya among other so-called developing countries), international organizations (such as the International Telecommunication Union and the Grameen Bank), companies (like the Coca Cola company, Unilever, Grupo Bimbo) and resource partners (with Visa, Mastercard, the Gates and the Citi Foundation, and USAID, among others). When Carolina received this letter inviting the Peruvian government to be one of the founding countries of the incipient Better than Cash Alliance, she forwarded the question to the Ministry of Foreign Affairs (*la Cancillería*) which assessed it and said yes but suggested that the Ministry of Development and Social Inclusion, which she represented, be the one to sign it, and not the chancellor. “And so that's why I went and signed it myself.” And in this manner and since its beginnings, she adds, “it was possible to establish financial inclusion in Humala’s government plan.”

One of the first things that Ollanta did once he became President (2011-2016) was to create the Ministry of Inclusion, in the last quarter of 2011. It is the youngest of the eighteen Peruvian Ministries, and its creation was particularly important for his government, as an attempt of materializing electoral promises: *Progreso para todos* (Progress for all) as the new government’s slogan stated. This creation was an attempt to address poverty and social exclusion problems in the

[24] In: https://www.betterthancash.org/about (accessed on 02/04/2020).

country more efficiently by reorganizing and grouping under one institution different dispersed national programs and strategies.

Carolina's trajectory and her appointment as a Minister, the philanthropy of international tech and banking industries forming new partnerships, and the networks of Peruvian bankers, development practitioners and bureaucrats were, in her story, all assembling into a global thing. The way she talks about it as all together, reminds me of what Collier and Ong (2005) define as a 'global assemblage.' They state that "as a composite concept, the term "global assemblage" suggests inherent tensions: global implies broadly encompassing, seamless, and mobile; assemblage implies heterogeneous, contingent, unstable, partial, and situated" (12). An assemblage "is the product of multiple determinations that are not reducible to a single logic," its temporality is emergent, its forms "are shifting, in formation, or at stake" (ibid). In this case, financial inclusion as an economic development goal for populations defined as poor is not exactly the same as the goal of a 'cashless world via digitizing payments' promoted by institutions such as the Better than Cash Alliance, even though they seem to need each other (more on this on Chapter 3). The latter requires the collaboration/compliance of 'the poor' by transitioning from their so-called "informal" cash economies to 'formal' (thus 'banked') digital economies (see Chapter 5). But here, at this particular time that Carolina recalls and the way in which she narrates it, it all this appears together, as part of the same global *assembling*; an arrangement of things that its broadly encompassing but always in the making, gaining or losing traction as its contingent agents move within or out of it.

For Carolina, "it was a perfect combination" of her being at the right place at the right time, "I was specializing on that topic [financial inclusion] and it was *el momento estrella de esos temas." El momento estrella* literally translates as the stellar/starring time (or the prime time) of these issues, but I could also translate it as what English speakers refer to as a moment in which "the stars aligned". And this is perhaps an interesting image to think with assemblages; the stars align in a

specific formation in a particular moment, but that formation is not stable; each star follows its own trajectory. Science can predict when these star alignments will happen, but stars will continue to move.

Similarly, the doings and goals of local ministries, national governments, finance corporations and philantropic organizations (and within them, of specific experts and their practices), are always shifting and are not reducible to a single logic, even though this *comunidad internacional'*s efforts to standardize practices and stabilize its alignments.[25] In fact, in a latter conversation, at the beginning of 2020, Carolina said to me that now the hot topic is digitalization or digital financial services, and financial inclusion is a piece within it. She added: *ahora todo* es *digital, digital, digital y solo digital lo que importa* (today all is digital, digital, digital, it's all that matters).[26]

Also, it is only by looking back at her own practices, prompted by my curiosity and questions, that Carolina reflects on what was going on in Peru and elsewhere at that time and qualifies it as *el momento estrella* of financial inclusion, as a 'context' preceding and justifying the particular practices of experts, including herself. On the contrary, I argue that these experts and their practices made this time that later they explained as a context. This alignment (or all togetherness) was possible because of (and through) their specific practices, tools, information exchanges and international encounters giving traction to one another. Peru played a significant role in the making of this prime time precisely because of the work of technocrats like her. In its *momento estrella,* Peru became a founding member of the international Better Than Cash Alliance (2012), and hosted the 2014's annual meeting of the World Bank's Consultative Group to Assist the Poor (CGAP), and launched its National Strategy for Financial Inclusion (2015). Also, Peru passed its local e-money

[25] I thanks Benjamin Bean for his comments on this.
[26] Personal conversation with Carolina, January 24th, 2020 via WhatsApp call.

laws in 2013, and the relationship between e-money and financial inclusion was explicitly inscribed in its name: "Law that regulates the basic characteristics of electronic money as a tool for financial inclusion."[27] Carolina participated directly and in one way or another in all these processes.

Another manager at PDP, who I will call Rafael, told me in detail the story about the design of the electronic money law and the debates it generated. The proponents of the law were the bankers organized in the Peruvian Association of Banks and, as he explained to me, their proposal was a consequence of the emergence of mobile money in Kenya. In his words, "what was happening in Africa with M-Pesa scared the banks". In Kenya, as I briefly described in the Introduction of the dissertation and I will explore in detail soon, the mobile money innovation didn't come from the banks. It came from people using their cellphones to send airtime credit to friends and family and airtime becoming a sort of currency, an unintended use of phones that a telecom operator (Safaricom, a local branch of the UK corporation Vodafone) transformed into a business (M-Pesa, in which M stands for Mobile and Pesa is the Swahili word for money). It was thus a telecom corporation getting into the business of money through phones. The documentation of the M-Pesa case in the international meetings and workshops of *la comunidad internacional* discussing microfinance and financial inclusion models, and through Powerpoints, e-bulletins and reports from institutions such as CGAP and the Better than Cash Alliance, reminded Peruvian bankers that the law is a key node in creating the conditions of possibility for imagining new infrastructures and bringing them into existence. For this manager, bankers feared that money in Peru could have a future in which banks were not central to it, if only the local laws from which mobile money projects could emerge opened the door for telecom operators and other players into the territory of money, as it was happening in Kenya[28].

[27] The e-money law title is "Ley que regula las características básicas del dinero electrónico como instrumento de inclusión financiera" LEY No 29985.

[28] The approach in Kenya was different, laisser faire and then regulate. The chapter will address this later on,

Rafael remembered that, as early as 2009, the bankers who would later initiate the Modelo Peru partnership and hire her to lead the development of their mobile money project-, pressured Alan Garcia's government to prepare electronic money laws such that the future mobile money projects would remain within the territory of banks-- even though by creating a network that deterritorializes money. Endless discussions followed between the financial sector represented by the association of banks and the executive branch of the government (the Ministry of Finance), the Central Bank and the Superintendency of Banks. Carolina remembered that the experts of all these institutions were looking at, comparing, and learning from legislations and experiences from other countries and their limits and bottlenecks, "borrowing stuff from Africa and other places". Even though García governed by the neoliberal book and for "the twelve apostles", that is the largest corporate groups in Peru (Crabtree and Durand 2016; Durand 2017), he wasn't convinced about the benefits of this law proposed by the bankers. So, the e-money law remained a project pending for approval when his second Presidential mandate ended in July 2011.

When Ollanta Humala became President and took office by the end of that same month, he was not convinced about passing this law either. As a presidential candidate, his agenda included a referendum to revoke the 1993 neoliberal Constitution initiated under Alberto Fujimori's first mandate. His campaign advisers were a mix of leftist intellectuals and "antifujimoristas," and his government plan had a strong agenda of economic reorganization (including opposition to a mining extraction regime that faced massive resistance in the country) and of wealth redistribution which, like M-Pesa, *scared the banks* along with most of the largest corporations, media conglomerates, and business powers in Peru (see Garcia Llorens 2011; Vergara 2011).

Ollanta Humala, a military lieutenant colonel with a master's degree in political science and another in National Defense, was campaigning for President for the second time (the first was in 2006) and won in the second electoral round against Keiko Fujimori (the eldest daughter of jailed

former President Alberto Fujimori). Between the final electoral results in May and the inauguration of his government on July 28, 2011 as is customary, coinciding with the national independence holiday (Fiestas Patrias), Lima's stock market nearly collapsed (and rebounded) several times. The media were constantly quoting business representatives (such as the National Confederation of Private Enterprise Institutions -CONFIEP) and neoliberal politicians and commentators, who warned about the negative effects that any changes in the economic model would have for the country. The constituencies that elected Ollanta, mostly from Andean regions directly affected by extractive practices (mining, oil, plantations) and often excluded from national politics, were eagerly anticipating the changes he promised.

Yet, as the Wall Street Journal commented, even before starting his new government, president-elect Ollanta Humala "dispelled most remaining doubts that he will try to continue Peru's current business-friendly economic policies by naming a host of establishment political figures officials to key cabinet positions".[29] The most important of these figures was Luis Miguel Castilla, appointed as Minister of Finance. Luis Miguel holds a PhD in Economics from John Hopkins University, was also trained at Harvard, worked as a World Bank consultant, and served as Deputy Minister of Finance during Alan García's government, which preceded Humala's. With this resume and background, Luis Miguel had a built reputation as a pro-market orthodox economist. Humala's decision to appoint him as the Minister of Finance was announced even before taking office.

Needless to say, the choice of a pro-market orthodox figure who had just served in the outgoing government was well received by the business sector in Peru as a clear sign of economic stability and a commitment to continuing the neoliberal economic model. This decision, of course, infuriated and disappointed most of Humala's voters even before his government began. It was a sign

[29] Matt Moffett and Robert Kozak "Peru Leader Taps Moderate Cabinet" July 22, 2011, in: https://www.wsj.com/articles/SB10001424053111904233404576460420620240838 (last accessed 09/03/2024).

that his administration would proceed with the usual mix in some Latin American countries, of neoliberal management of the national economy and fiscal discipline, with a touch of welfare state policies to make the former viable.

In line with this, as I mentioned already, one of the first things that Ollanta Humala did was to create the Ministry of Inclusion, where Carolina was appointed as the first minister. Even though he maintained a neoliberal orthodox approach to macroeconomic management, this ministry was intended to work on the redistributing the country's economic growth to secure 'Progress for all,' as was the government's slogan proclaimed. Although some welfare programs were created such as *Pensión 65*, a conditional cash transfer program for adults over 65 years old living in extreme poverty, in practice, the Ministry of Inclusion mostly "collected and centralized" the social programs that already existed and, in some cases, rebranded them into new names and logos. Among those programs were *Juntos* [Together] another conditional cash transfer program directed to people in conditions of vulnerability, exclusion, and extreme poverty. Most users of these two welfare programs live in rural areas of the country and on the outskirts of larger cities.

Among the "biggest" innovations of the ministry, besides the centralization of existing welfare programs, were targeting measures (*focalización*), the creation of a system for the registration of the programs' beneficiaries, and the dissemination of a discourse on the temporality of the programs and the "path" its *beneficiarios* were supposed to take toward "graduation" or exiting them.[30] In other words, rather than introducing new programs, welfare underwent a restructuring process—a systematization and organization into measurable outcomes and clear goals and end points, following a logic consistent with the TV spot I described earlier and the overall mainstream

[30] I thanks sociologist Eduardo Ballón for his comments on this.

idea of the poor as a 'micro entrepreneur' in charge of their own destiny, through their own efforts with some help of the state (see Box 1).

Carolina recalls, "when the President began his mandate and saw the mobile money law project in a meeting with the Minister of Finance (Luis Miguel), his first reaction was: 'why do we need to do this *for the bankers*? How does this relate to us?'" Carolina continues: "because at that time I was *la abanderada* (the advocate) for financial inclusion [as Minister of Inclusion], the Minister of Finance called me and asked me to explain to the President how electronic money was going to be useful for *los viejitos de Pension 65* [the elderly people from Pension 65], for the rural, for the poor."

Carolina's explanation connected the e-money law with the constituencies that her ministry served: the elderly, the rural, the poor. When Carolina says that the e-money law is going to be useful for los viejitos, the rural and the poor, she is basically talking about people living in poverty who in Peru also experience other forms of exclusion or vulnerability, at the intersections of race, class and gender hierarchies in the country. Thus, Carolina connected the e-money law project to Ollanta's agenda of progress for all, and "with that explanation, the president agreed." In other words, she was called in by the Ministry of Finance to convince President Humala of the "goodness" of the e-money law. The goodness that she explained relied on the ability of mobile money to facilitate financial inclusion (for the retired -*los viejitos*-, the rural, and the poor). Carolina convinced the president that it was not a law for the bankers; rather, banking through mobile money was a *tool for inclusion*.

She is the expert summoned to explain -which here also means *to convince*- the President because she is the designated spokeswoman within the government cabinet to speak on behalf of the poor, or, in her words, *la abanderada* (their standard bearer). Also, she is neither this nor that—not a banker nor the usual technocrat. She is knowledgeable, performs knowledgeability (and the academic

aura of objectivity that comes with it) and has a capacity to bridge the worlds of politics and economics. Her ability to translate the language of the State to the language of the Market (and vice versa) includes an ease of movement between local projects and global institutions, a kind of intimacy with the poor as well as with the Ministry of Finance, the World Bank, Better than Cash Alliance, and CGAP, which she introduces as a policy-making mechanism. This intimacy is reflected, for instance, in the way she talks indistinctly about "los viejitos", "la Super" (Bank Superintendency), "los practitioners"—using diminutives, shortcuts in their names, or English words.

But her intimacy with power and her power to convince the President involve more than what I have just described. Luis Miguel, the minister of Finance, called Carolina. Both are economists, trained in the United States. They share an American experience and perhaps an Amartya Sen (1999) type of approach to development, particularly the capability approach which infused international development from the late nineties onward. The macroeconomist who oversees and plans the aggregated economy of the country—or "the economy of the ensemble of microeconomic actors," Carolina defined it—needed her help. That is, the help of the microeconomist who deals with the economy of individuals, families, and microbusinesses, or with the ensemble of those considered poor, who are recipients of the Ministry of Development's social programs and in need of financial inclusion to better equip them to pursue their own development.

Luis Miguel, a pro-market orthodox, head of the most powerful ministry, needed Carolina, the social hearted woman head of the youngest ministry, to explain to the President how the Economy with capital E works, and how macro and micro economic levels connect with this law: what is good for the poor (to be financially included) could in turn be good for the banks and the country (presumably more money circulating through banks would drive economic growth). Why does the President need to be explained? He is lost because the state is not the prime mover; the banks are; and Carolina and Luis Miguel articulate what the neoliberal state is that Ollanta was not.

In January 2013, four years after the initial conversations between the bankers' association and government representatives, the mobile money law was finally launched. In my view, what banks alone couldn't accomplish during four years of discussions with two different governments was only possible at that time, and not before, because the spokesperson advocating for the law was the Minister of Development, not the bankers. The Minister of Finance, the macroeconomist, could not have done it alone either. He needed the microeconomist—a woman with close ties to both the spaces of the family economy, traditionally associated with women, and the international development networks of experts like her, where the face of the microentrepreneur and microcredit recipient is often a woman as well (more on this in Chapter 2, also see Roy 2010).

For Humala's government officials, who were at the time in the process of discussing a National Financial Inclusion Strategy, mobile money could only be supported as a tool for making the first "step" in the financial inclusion "ladder."[31]The development ladder that little Vilma and her mother who live in poverty, have to climb, as shown in the MIDIS spot (see box 1). As I mentioned before, such a relation was inscribed quite literally in the mobile money law title: *Law that regulates the basic characteristics of electronic money as a tool for financial inclusion*.

So, in principle, it is a law with a strong component—or perhaps an aspiration—of social and financial development. Electronic money is conceived as a tool to include those considered excluded from the formal financial system. It is designed for those who do not have bank accounts, for the informal, the elderly, the poor, the rural population. However, the law specifies in its third article that only companies operating under the supervision of the Superintendency of Banking, Insurance and Private Pension Fund Administrators – *la Super,* as Carolina calls it- can issue electronic money. In other words, electronic money was tied from its inception to the private banking system. According

[31] The Estrategia Nacional de Inclusión Financiera (ENIF) was launched in 2015.

to the neoliberal Constitution of 1993, the state has a subsidiary role in the country and can only provide services where business do not.[32] Thus, in practice, financial inclusion, the heart of the law, was left to the discretion of the banks.

Modelo Peru and its collaboration among competitors' structure, which garnered international enthusiasm and interest as a model of banking-financial inclusion, stems from this law. This law, which blends the government's development objectives (financial inclusion) with private parties executing them (e-money issuers—mostly banks), presents a challenge for bankers and bureaucrats alike, and also for the engineers in charge of converting these ideas and sets of conditions into an actual mobile money platform (more on the engineers and their practices in chapter 2 and 4). This law, which set the conditions for the existence of Modelo Peru, would not have succeeded without the intimacies described earlier. But it was also made possible because, by 2013, the knowledge practices of a growing network of international development organizations, including Better than Cash Alliance and CGAP, had succeeded in framing mobile money as a means for financial inclusion.

Thus, I suggest that in Peru, mobile money was tied to financial inclusion right from the start through the regulation that allowed for its existence because the conditions of possibility to think and establish that relation as a matter of fact were already in place. Paraphrasing Latour (1996), financial inclusion was becoming a global collective dream, no longer the invention of a handful of development practitioners and researchers. It was becoming self-evident, even necessary.[33] In the following sections, I move away from Peru momentarily to examine other practices that participated in creating the conditions of possibility for this prime time for financial inclusion.

[32] I thank Marisa Glave for this explanation.

[33] Latour is speaking of Aramis, a new form of public transportation project, and how technological projects become objects, actual infrastructure.

Multidonor development classificatory efforts designing the unbanked

In 2015, a year after having held their annual meetings in Peru, the Consultative Group to Assist the Poor (CGAP) prepared a Prezi presentation to celebrate its twenty years of existence "empowering the poor through financial services."[34] This section examines that 20th anniversary Prezi presentation because it offers a timeline that intertwines the story of the institution from its beginnings in 1995 to 2015, with a story about the progression from microfinance to financial inclusion frameworks (see Figure 1.2). As examined in the previous section, this sense of progression was self-evident for practitioners like Shane and Ira, and also Carolina and the ways in which they recalled their participation on projects, international conferences and policy-making. Here I am interested in examining how that shift from microfinance to financial inclusion goes hand in hand with a shift in ways of classifying groups of people from 'unbankable' to 'unbanked' and in which mobile money plays a key role.[35]. In short, it illustrates from a different standpoint how a technology for money through development knowledge-making and experimentation practices becomes a model for financializing 'the poor.'

In other words, this section of the chapter illustrates the practices of *la comunidad internacional* (the international network) of people interested in telephones, finances and development via an exemplary case (CGAP) through which 'financial inclusion' becomes thinkable (as a desirable future within this network). It shows the encounter of some development practices (microfinance) and a technology (Kenya's mobile money M-Pesa) which changed both the practices and the technology. The practices "evolved" into a new development paradigm (financial inclusion) by decontextualizing and recontextualizing (Collier and Ong 2005) a local mobile money business

[34] CGAP's institutional slogan.
[35] "Advancing Financial Inclusion" published in October 14, 2015. In: https://prezi.com/5aovkweouktk/advancing-financial-inclusion/?utm_source=twitter&ut m_medium=landing_share (accessed on 06/07/2016)

into the *scalable* technological means to pursue (and measure) the goals of this new development paradigm.[36]



Figure 1.2. Detail of CGAP's *Advancing Financial Inclusion Annual Report* 2016, produced after the Prezi presentation I describe in this section. Source: CGAP

Phase 1: unbankable constituencies, social collateral and joint-liability group

CGAP is a group of institutions, or as its members call it, a "multidonor effort" hosted in the World Bank. It started in 1995 with eight members, all of them bilateral donors (like the World Bank and the Interamerican Development Bank) and not a single private institution.[37] By its 20th

[36] Global phenomena "have a distinctive capacity for decontextualization and recontextualization, abstractability and movement, across diverse social and cultural situations and spheres of life." Also the example of a standards regime and what Latour calls an "immutable mobile": "It is a technoscientific form that can be decontextualized and recontextualized, abstracted, transported, and reterritorialized, and is designed to produce functionally comparable results in disparate domains" (Collier and Ong 2005: 11)

[37] The list of eight bilateral donors also included Canada's SIDA, the Dutch, French and German government's aid, and the Asian Development Banks. Personal conversation with Ezra from CGAP on September 17th, 2019.

anniversary in 2015, there were more than thirty organizations from national development agencies to tech and finances philanthropic foundations (such as the Gates and the Mastercard Foundations), finance ministries and other organizations listed as its members.[38] According to its website, CGAP is Based at the World Bank, its members include "bilateral and multilateral agencies, foundations and development finance institutions" whose role is to "leverage" CGAP's work "and take solutions to scale".[39]

CGAP divides its timeline into five phases. 'Phases of what?' would be a good question. Without having attended myself the meeting(s) in which this presentation was used, I could only guess that CGAP's officials are presenting these phases as their proposed narrative and order in the transition from microfinance to financial inclusion schemes, one in which their institutional work is a crucial node. That makes sense because, as Carolina commented, 2015 was still *el momento estrella* of financial inclusion.[40] Also, the presentation starts with a quote from Queen Máxima of the Netherlands establishing that relation: "CGAP has been instrumental in the transformation of financial inclusion." Máxima Zorreguieta is an Argentinian economist and former Wall Street banker who married the heir to the throne of the Netherlands. Because of her professional background in the world of finances, the United Nations (UN) invited Queen Máxima to be the UN secretary-general's special advocate for inclusive finance for development (UNSGSA).She is a woman with very long titles occupying, since 2009, a strategic position that bridges the worlds of banking and development together. Put differently, she embodies this new blending of finances and social inclusion into financial inclusion.

[38] USAID, WB, UNCDP, Mastercard Foundation, Credit Suisse, Gates Foundation among others partners are listed in https://www.cgap.org/about/member-organizations (accessed on 10/28/2018)
[39] Ibid.
[40] See first section of this chapter.

After the queen's quote, the presentation is divided into the five phases mentioned above. In the first phase (1995-98), the protagonists are "social entrepreneurs in the developing world" who pioneered "new ways of providing credit to poor families in the informal economy." These innovations enabled "microfinance institutions to serve low-income families previously considered 'unbankable.'" In these early years, CGAP supported "experimentation," advocated for the provision of financial services for the poor and collected and disseminated information on "sound practices."

There are no bankers described in this first phase. Instead, it speaks of pioneers (social entrepreneurs), poor families (unbankables), informal economies, and a developing world. In fact, at its beginnings, and long before CGAP was created, local NGOs and non-profit organizations were the only ones experimenting with ways of providing credit for those considered 'unbankable' both by the banking industry and by the state. From the perspective of banks, traditionally "credit is not extended to poor individuals because these borrowers provide no collateral to assure that they will act prudently once given a loan" (Carpenter and Williams 2010, 4).

Shane , Economics professor and former microfinance practitioner himself, explained to me that the poor lack the type of information that traditional lending mechanisms need (credit scores, properties). Bankers call this issue "information asymmetries," and it means that they cannot calculate the likelihood of poor borrowers to default, which bankers refer to as the "moral hazard" and "adverse selection" problems. He added that "the microcredit revolution was founded on the *invention* of a different lending mechanism that did not rely on collateral to get around these 'information asymmetries'".[41]

That *invention,* as Shane calls it, was 'social collateral' (Schuster 2015) and consists in lending to a group of borrowers instead of to individuals. The group is held responsible for the loans

[41] Shane, personal conversation in July 2019.

of its members—what is in technical terms referred to as "joint-liability group" (Kar 2018:111)—which means that members are in charge of monitoring each other so everyone repays her/his part of the group loan. Thus, the group itself acts as collateral to the debt, substituting physical collateral such as houses or other property. CGAP's presentation states that this innovation enabled *microfinance institutions to serve low-income families previously considered 'unbankable.'* However, more than an invention, it is a *translation* of (informal) practices through the lenses of banking (see Latour 1983).

The low-income families' practices didn't change, what we see here changing is how they are examined, classified and intervened by financial development practices. The pioneers of CGAP's presentation were experimenting with different lending mechanisms in relation to existing social practices in the field, like saving groups. They found that a shared responsibility in repaying loans – and the threat of social sanctions such as group expulsion-, increased the likelihood of debt repayment, and that was named 'social collateral'. I will return to this later, as it connects with what happens in the second and third phases (also see Chapter 5).

Phase 2: knowledge and funding infrastructures standardizing, scaling up and professionalizing microcredit

The second phase described in CGAP's presentation (1999 – 2003) is summarized as a moment of "scaling up microcredit and professionalizing the sector." Microfinance institutions grew to reach sixty-five million customers. CGAP's role this time was to build "good practices standards." It collected and organized data and made it public by launching the online "microfinance gateway," a "global resource on financial inclusion" that gathered papers, case studies, toolkits, jobs and internships, trainings, and events.

During this phase, CGAP is building a knowledge infrastructure that accompanied and allowed for the above mentioned "scaling up" of microfinances (from pioneers to professionals; from local experiments to millions of users) which set in motion the turn from 'unbankable' to 'potentially bankable' categorizations of people. This Consultative group played a companion/advisor role to microcredit practitioners in the field through collecting 'case studies;' by classifying some practices as 'sound' and 'good' and discarding others; through the making of 'standards;' and by creating the online site (microfinancegateway.org) for the sharing and dissemination of all these practices. In other words, their knowledge infrastructure was stabilizing what social collateral and microcredit initiatives should look like and how they should work.

The presentation doesn't mention that these criteria also fed CGAP – and its bilateral donors' funding grants guidelines.[42] Local practitioners (social entrepreneurs) had to take these standards into account if they wanted not only information on good practices but also financial support for their microcredit initiatives. Thus, by 'professionalizing' their craft, they were also participating in further standardizing microcredit practices in the field.

Phase 3: knowledge and funding infrastructures standardizing, scaling up and professionalizing microcredit into microfinance for the 'entrepreneurial' poor

The third phase (2003-2008) described in the Prezi presentation speaks of the consolidation of microcredit. Once it is more less standardized globally, different practices can be counted as microcredit and thus 'consolidated' to the point that, as the presentation says, the United Nations named 2005 "the International Year of Microcredit." But the Prezi also states that "meanwhile, the focus begins to expand beyond microcredit to microfinance." An initial focus on *credit* for the poor is

[42] As Ezra from CGAP commented in a personal conversation (09/17/2019), CGAP started with an operating fund of 30 million dollars for grants to MFIs, and an administrative 3 million for administration purposes.

turning in to *finances* for the poor: "providers broaden their offerings for poor customers to include services such as savings and insurance." CGAP makes partnerships with diverse institutions including commercial banks "to promote diversity of financial services to poor people." The presentation mentions that CGAP also led some experimentation "working with commercial banks trying to reach lower income customer segments."

In this third phase it is becoming clearer that the knowledge that CGAP is producing about a population category 'the poor' and their money practices is making this population attractive to the banking industry, and not only to the international development community. Put differently, CGAP's work of classifying practices, making standards and promoting microfinance is succeeding in translating 'social collateral' (already a translation of existing economic practices), into terms that bankers could understand. Bankers translated this further, isolating the key variable for their calculations which was "peer monitoring," as it increased the likelihood of debt repayment and effectively reduced the "bankers' moral hazard problem" (Carpenter and Williams 2010, 4). Also the numbers were growing (through 'scaling up' practices) making microcredit a potentially attractive market for them.

I would like to highlight here that it is not only the microcredit practices themselves that are shifting and in doing so, bringing new actors to the stage (from NGOs to microfinance institutions, to banks). CGAP is also in this loop and necessarily changing as well. When I spoke with Ezra, one of CGAP's founders, he recalled that when they were conceiving CGAP, back in 1995, he wanted "the who's who in the industry at the time" in its advisory board. [43] He invited Muhammad Yunus, an Economics professor, founder of the Grameen Bank, and perhaps the most prominent figure in the microcredit arena because of his work delivering, back then, microloans for the *poorest* in

[43] Conversation over the phone with Ezra on September 17, 2019. Unless noted, Ezra's quotes come from that conversation.

Bangladesh. Muhammad Yunus wanted to call the group *Consultative Group to assist* '*the poorest of the poor'* but not everyone in the advisory board agreed, so they settled it with just 'the poorest'. CGAP's acronym thus stood initially for Consultative Group to Assist the Poorest.

Ezra couldn't remember exactly when CGAP's name changed to Consultative Group to Assist the Poor but he sent me over the mail some materials (Figure 1.3). One is CGAP's 1998 Status Report, and the second is its 2005 Annual Report. As Figure 1.3 shows, in 1998 the organization name was still its original, *Consultative Group to assist the Poorest*, and the cover of the report features a picture of a group of women. However, by 2005, the year that the United Nations declared as the international "Year of Microcredit," it had already changed to *Consultative Group to assist the Poor*. This is more than a superficial detail. It signals that these processes of standardizing microcredit practices don't go without tensions and struggles, but more importantly, that they involve the constant design and adjustments of who the subjects of microcredit are. The design of policies and procedures to intervene a population necessarily designs the population itself.

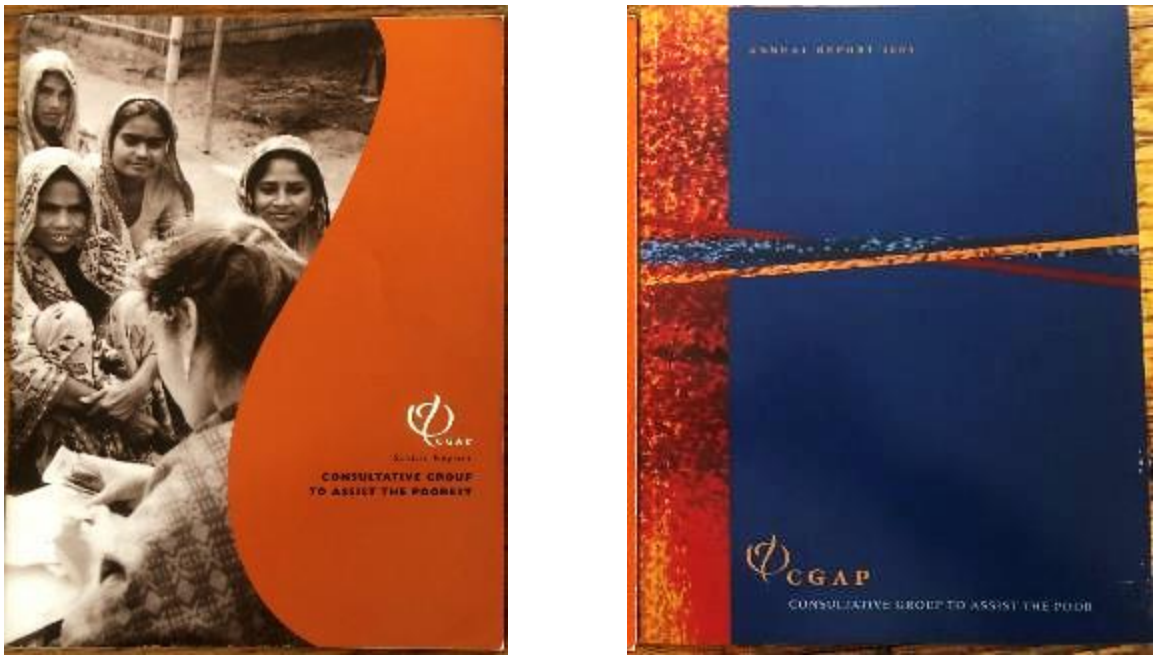


Figure 1.3. Two CGAP's official documents side by side. On the left, 1998 Status Report. On the right, the Annual Report 2005. The logo remains the same but the name changes from 'the poorest' to 'the poor'.

I asked Ezra what the reasons for this change in wording –from 'the poor' to 'the poorest'- were. He told me that 'the poor' refer to the 'the working poor,' those "who work and can repay their loans." In contrast, "the poorest need food support, electricity, housing" and while microfinance is part of the toolbox, "the claim that it will serve the poorest just doesn't make sense." For CGAP's cofounder, microcredit was for those who "were off the ground and sustaining themselves." In other words, this new categorization separates between the 'working' (or entrepreneurial) poor, as a subgroup that is potentially 'bankable,' while 'the poorest of the poor' remain 'unbankable.'

By changing its name, CGAP is pointing out at the group's transition in its emphasis and goals, and Yunus, who insisted on working with the poorest, withdrew from participating in CGAP's advisory board anymore. Thus, what CGAP's officials narrate in their 20th anniversary presentation as a transition between an *experimental phase of microcredit* to a *professionalization of the field of microfinance* corresponds with the work of this Consultative group. In its early phases, CGAP experimented with the poorest following social pioneers (including Muhammad Yunus), but once the model 'scaled up' through their practices, they preferred to professionally -or profitably- work (or recommend other institutions to work) with the poor and the commercial banking system.

This name changing also points out to the fact that CGAP's model is one way of understanding and performing microcredit but not the only one, and that standardization processes do not go without contestation or dissent. Ananya Roy extensively analyzes the divide between microcredit models in her book *Poverty Capital* (2010). She distinguishes between the "Washington consensus on poverty, anchored by institutions such as CGAP" (p.89) and the "Bangladesh consensus on poverty" (p.100), based mostly on Yunus' work and the Grameen Bank. Microfinance à la Yunus "is premised on the notion that credit is a human right and that it can improve the lives of

the poorest. This approach sees microfinance as explicitly distinct from, and even opposed to, commercial banking" (p.24).

On the supposedly opposite corner, and "under the watchful eye of CGAP, microfinance has been reinscribed as financial services for the poor, a new global industry that can be integrated into financial markets" (p.31). This is what Roy calls 'the financialization of development;' stating that through CGAP's task of making authoritative knowledge about microcredit, "a metrics of risk assessment and management is forged," through which "the poor are classified and categorized" and where "more generally the business of poverty comes to be "financialized," or transformed into a set of financial benchmarks and indicators" (p. 31). Although anthropologists have documented how in practice and over time, the Grameen bank approach—so celebrated internationally—did not differ significantly from CGAP's approach and was too increasingly shaped by investment interests (Kar 2018). It generated the same problems associated with mainstream microfinance, including the creation of over-indebtedness and the enforcement of gendered codes of shame via peer monitoring (Karim 2011), leaving the life of South Asians as precarious, if not more so, than before.

But returning to the presentation and progression it describes, by 2005, and with the help of these metrics of risk assessment and management, CGAP has demarcated its approach from the Grameen Bank's one and has established a distinction between those who are potentially bankable (the working poor) and those who are excluded from it (the poorest). Moreover, besides the fact that, as anthropologist of development Anke Schwittay observes "not all materially poor people are equally deserving" and their membership in this assemblage "is stratified according to economic activity" (2011, 385), there is also a gender division accompanying this socioeconomic stratification.

Within the group of the bankable, most microcredit initiatives focus on women. I mentioned in the previous pages that in development practices, information (as knowledge dissemination) goes hand in hand with money (as access to funds), and for instance, the local practitioners needed to

embrace the international development organizations' goals and standards to get their financial support for their microcredit initiatives. Something somewhat similar happens here at another scale: working poor women become the recipients of microloans and in exchange, they become the public face of microfinance, their images populate international development organizations websites, brochures, Powerpoints, billboards, ad posters, and publications (I return to this in the next chapter).

In development practices, women transition from being the invisible farmers, as well as reproducers and not producers (Escobar 1995) to becoming highly visible (Roy 2010) and expected to save the world (Murphy 2012; 2017). The Third World woman is the 'visible poor', the global public face of millennial development and microfinance (Roy 2010), who, according to development narratives, "is empowered by the small loans given to her to start and grow her own business and thus enterprise herself and her family out of poverty" (Schwittay 2011, 385). However, as Escobar (1995) points out, however, what is made visible are stories of women who are seen but not heard—that is, they are not truly empowered to go ahead with their own projects, which may noy be as entrepreneurial.

There is a growing body of critiques to this narrative and the sets of conditions and constraints imposed to beneficiaries in these types of interventions, both in academic texts and financial development literature written by its practitioners. These critiques include observations that women are often the formal recipients of loans administered by their husbands (Karim 2011). Within these critiques, some scholars highlight how these discourses and practices nonetheless ascribe entrepreneurial qualities and superior moral values to women compared to their male counterparts, thus, constituting them into more reliable subjects of risk for financial markets (Roy 2010).

Furthermore, my argument concerning the practices that model the progression I am examining is that all this boundary making—determining who among the poor is worthy of credit when microfinance adheres to commercial banking metrics—not only "nuances the rhetoric of

inclusion, which is not all-encompassing" (Schwittay 2011, 385) but it also reduces the size of the market. The category of the poor yet-economically-active-and-entrepreneurial woman represents a relatively small segment of the market –or, to use a common metaphor among economists, a small piece of the pie. It appears, judging by the extensive multidonor efforts invested, that this assemblage is focused on figuring out how to make this new market 'sustainable' (aka profitable) .

But all this is about to change. Returning to the Prezi presentation and still in its third phase, there is an entire frame dedicated to the Kenyan mobile money M-Pesa: "2006 [sic] *M-PESA* launches gaining 1 million active users within 1 year."[44] The text is accompanied by a picture of two hands holding a Nokia cellphone (a basic mobile phone; for some, a "brick phone"). M-Pesa marks an event in CGAP's timeline, one that will be fundamental in shaping what comes next.

Phase 4: M-Pesa, Global Findex and the Unbanked

The fourth phase (2009-2013) states a problem with microcredit: "there is evidence of saturation in some high-growth microcredit markets." It also enunciates a promise –which is the direction that mobile money through M-Pesa makes possible-: "the cell phone and other technology-based solutions offer promise in terms of cost and reach," which broadens "the range of financial services for the poor" and intensifies the expansion of "physical access to financial services." At the same time, "policy makers become aware of the importance of inclusive financial systems for greater reach." The presentation also mentions that, in 2010, G20 leaders launch the Global Partnership for Financial Inclusion (GPFI) and they name CGAP as an implementing partner. It then declares that

[44] M-PESA launches in March 2007, it reaches the one million users mark only eight months after, in November 2007. After a year, in March 2008, it has reached two million users. See: http://www.safaricom.co.ke/M-Pesa_timeline/timeline.html (accessed on 06/09/2016).

the World Bank and Gallup introduce in 2011 the Global Financial Index (Findex), showing that 2.5 billion people were "unbanked." In this new phase, thus, with the introduction of more metrics and measurings and the information generated through them, besides the bankable and the unbankable populations, a new category gets created: the unbanked. This category doesn't simply add to the existing ones; rather, it significantly transforms how these populations are framed, effectively replacing the former classifications of bankable and unbankable.

The Global Findex, according to the World Bank, is "the world's most comprehensive data set on how adults save, borrow, make payments, and manage risk" [45]. Published every three years since 2011, the data is collected in partnership with Gallup, Inc., through nationally representative surveys of more than 150,000 adults in over 140 economies. It plays a crucial role in shaping the global financial inclusion assemblage I am describing through these pages. On one hand, the Global Findex involves a partnership between the Bill and Melinda Gates Foundation, the philanthropic arm of a tech giant (Microsoft Corporation), which provides the funding for its launch, and the World Bank, an international development organization that hosts the database in its open online archives and disseminates its authoritative knowledge. On the other hand, as was the case with CGAP, the authoritative knowledge produced through this partnership informs in turn the development goals and strategies that accompany the financial support provided to national governments. This means that if a country seeks financial support from these institutions, it must adhere to their goals, frameworks, and guidelines, further disseminating these views and cementing their dominance in development/world views. As seen at the scale of local institutions and also of the female working poor, I observe here how money is tied to information (or knowledge/power dynamics): access to

[45] From https://globalfindex.worldbank.org/ (accessed on 03/11/2020).

financial resources is contingent upon formal allegiance and alignment with these institutions' objectives.

As the third and fourth phases of CGAP's presentation reveals, the consolidation of microcredit, its climax, is also the beginning of its problems: it has saturated its market of entrepreneurial poor (mostly women), a relatively small segment counted in millions. The Prezi presents a way out: cell phones and mobile money, modeled after M-Pesa, set in motion new promises of lower costs and broader reach to access those not yet financialized. M-Pesa also exhibits that there are more people need transactional technologies (to send money from one place to another) than microcredit. Notably, M-Pesa users reached one million in its first year, with minimal effort from its designers – in comparison to the intensive efforts required to "scale up" microfinance, which involved going door to door, forming saving groups, monitoring them, and collecting microloans.

M-Pesa displayed a clear correlation: while the poor may not have bank accounts, they do have cellphones, and they were using them to send and receive money. The Prezi further notes that more alliances were formed (Global Partnership for Financial Inclusion), which funded additional research (like the Global Findex) to explore this correlation. Thus, this new research *quantifies* the promise of mobile money by literally counting the people who could potentially be reached with cellphones/mobile money. It turns out that they were many (2.5 billion at the time), and they were no longer deemed 'unbankable' due to their access to phones and the ability of phones to act as wallets.

A brief aside: in the initial Global Findex questionnaire of 2011, most questions focused on whether people had bank accounts for saving money, receiving payments, wages, or remittances, and whether they used microfinance institutions for saving or borrowing. The survey also included detailed questions to expand the knowledge of international development organizations on how the poor save money (through banks, cooperatives, MFIs, or "informal" options outside the family). It asked to provide local examples, naming a few such as chit funds, tontines, merry-go-rounds,

ROSCAs, burial societies. Only one question addressed the use of mobile phones for financial purposes. In the Global Findex questionnaire of 2014, however, mobile phones were the focus of two exclusive questions and were included as one of the possible answer options in eight other questions related to sending and receiving money between people, payments from businesses or the state, and about making payments. As is commonly understood among scholars of science, you only receive answers to the questions you ask, and these tools are therefore both measuring and creating the conditions of possibility for particular kinds of worlds to emerge.

Microfinance started to show that a fraction of the populations deemed 'unbankable' could actually be 'bankable,' that fraction was named the 'entrepreneurial' or 'working poor.' But my point is that this insight only gained the traction needed to transform a development paradigm and its practices when mobile money appeared on the scene –and with the research and imagination that the latter propelled.

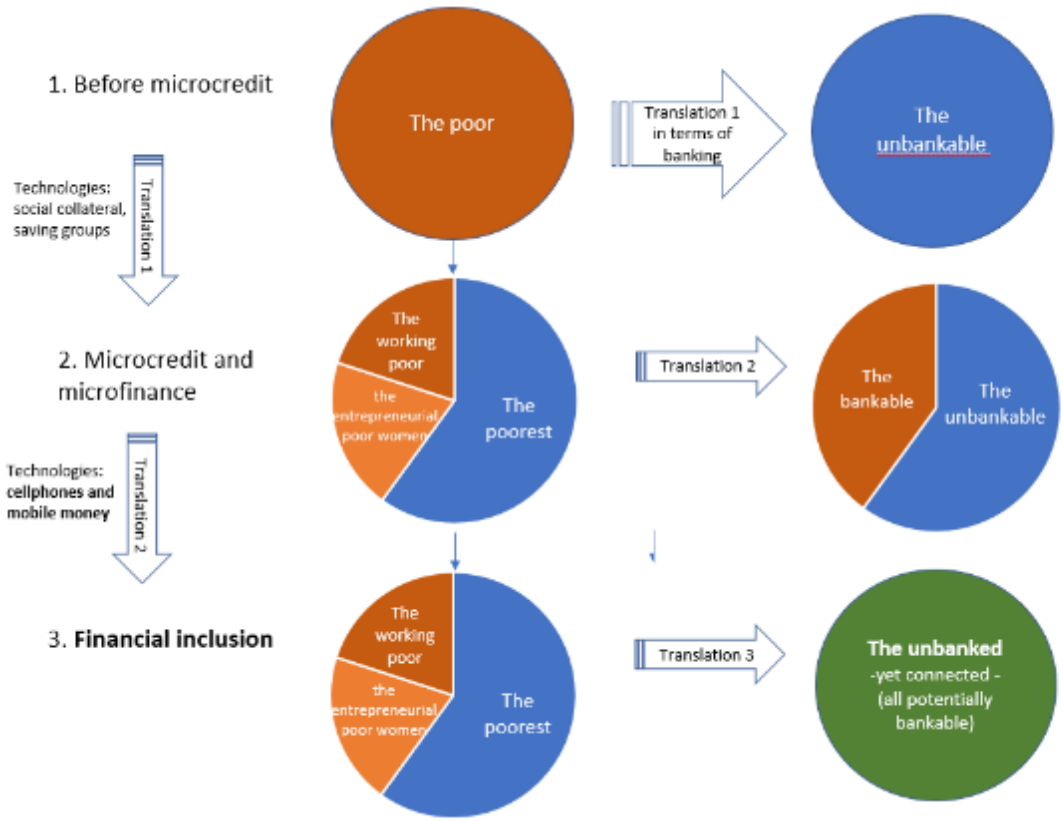


Figure 1.4. The population pies, their slices, and their translations. On the left, translations and shifts in development paradigms and ways of classifying and designing populations. On the right, translations into banking terms. Diagram by the author.

In Figure 1.4, I revisit the metaphor of the economy as a pie to specifically illustrate the recategorizations of 'the poor' happening throughout these phases. These shifts are propelled by the emergence of different technologies for financializing the poor and the practices that come with them—whether through groups of borrowers, cash and social collateral or through cellphones and mobile money—. In Figure 1.4, I show a series of translations of these shifts both in international development language (of the poor, the poorest, the entrepreneurial poor) and in banking terms. Before microcredit, the poor were simply the unbankable. With microcredit, and the distinction of the poorest and the working poor (and within it, the entrepreneurial poor women), we had in terms of banking a slice that was the bankable and another the unbankable (which was still the biggest slice).

With the advent of mobile money as a transactional service, as digital cash, both the working poor and the poorest, indistinctively, become the potential market for finances (as savings, payment services, remittances), now regrouped under the category of the *unbanked*. Microcredit does not disappear, but its significance diminishes momentarily (after all, the business of banks is in lending money), subsumed within first within the broader umbrella of microfinance and then within financial inclusion. In short, the figure of the 'unbanked' has thus become the "contact point" (Murphy 2012), or the common interest, for development agencies and banks alike.[46]

CGAP describes its role in the fourth phase as that of a motivator of "policy makers, regulators and other key actors to consider branchless banking." It also played "a major role in helping policy makers (e.g. the G20) working to build inclusive financial systems." As we can see, this institution disseminated, through its knowledge practices, an imagination in which branchless banking is the foundation of inclusive financial systems. Moreover, mobile money, which started as a telecom business (like M-Pesa), is captured as "branchless banking" and with that, mobile money and financial inclusion are bred and nurtured together. This is the time in which Modelo Peru started to be discussed and designed, in an environment in which banking, mobile money and financial inclusion were already constructed in the dominant practices and narratives as part of the same assemblage and progression.

Phase 5: Mobile money as branchless banking: financial inclusion as a development outcome and not a means

In the fifth phase, "from 2014 to the present" (2015), CGAP's presentation explains that "half of the world's population has mobile subscription –up from 1 in 5 in 2004 (figure 1.5). Mobile money services are available in 60% of the world's developing markets." It also states: "account

[46] See Murphy (2012) and the figure of the Girl as a contact point for feminism and capitalism.

ownership increasing in nearly all developing countries." This statement captions a world map in which some countries are highlighted and accompanied by charts and percentages that compare bank account ownership in 2011 and 2014. The Global Findex and other studies now produce yearly reports about unbanked people (whose number dropped from 2.5 billion to 2 billion in 2016) and their use of cell phones as financial tools.



Figure 1.5. Frame of CGAP 20th anniversary Prezi presentation, publicly available. Uploaded to the Internet in October 14, 2015 (last accessed 09/12/2016)

Now, why is it that the term chosen is *unbanked* instead of all becoming potentially *bankable*? One explanation, it seems, is that u*nbankable* and *bankable* are more like conditions of being, states of matter; either you are bankable, or unbankable. Their divide speaks of potentiality (an ontological distinction perhaps?), whereas the division of banked and unbanked is more about temporalities and enacted action, and in that way, it enables teleological narratives of progression (favorite of both bankers and development practitioners), which have direction, a way forward (a set of predefined steps for everyone such as the ones on the 'Vilma wants to be well' inclusion ad). It is a matter of time that the unbanked become banked through the banks and partners' action.

Historian of development Gilbert Rist (2008) explored the transition from a world divided between colonizers and colonized to one of underdeveloped and developed nations. His analysis is useful to think with the shift from viewing populations as unbankable versus bankable—two distinct and opposing categories—to unbanked versus banked, which suggests a continuum. In this latter framework, the unbanked are seen as an earlier, incomplete version of the banked, but both belong to the same system, with the unbanked merely requiring more assistance to 'evolve' into banked. This perspective carries a genealogy of such categorization practices, where the unbanked are located in the past, denying the coevalness of these constituencies and their agency on it, all the while obscuring how the practices of the banked contribute to keeping the others where they are.

Similar to populations classified as underdeveloped, the unbanked are established in quantitative mode (through statistical exercises and surveys), with each nation generating its own numbers, making the phenomenon appear internal, self-generated, and yet subject to improvement and accelerated through external intervention. By naturalizing the historical conditions of such divisions and framing some as less evolved, this narrative justifies further intervention, ostensibly for the benefit of those being 'helped', but ultimately for the growth of the nation.

As the populations are classified and re-classified extending the market beyond entrepreneurs-only (microloans are only for some but financial inclusion for all) to billions of people, another shift is happening: providing financial services to 'the poor' becomes the end in itself and not a means to something else. Within microfinance frameworks, what the poor were lacking was money (not financial services), thus the solution was to provide microloans (a type of financial service) to work as capital for their microenterprises. The goal being that they could support financially themselves and alleviate their poverty. But not everyone can be an entrepreneur.

With financial inclusion, the poor's lack of access to financial services (an absence) is "translated into a need" (Schwittay 2011, 383). What it was a means (financial services) becomes a

goal, and a technology (mobile money) becomes the means to achieve that goal. Until microcredit practices, development practitioners' narrative used to center in the poor. Bankers narrative of microcredit centers in the accountability mechanism that this framework provides: peer monitoring to repay loans, and thus, it centers on money. Financial inclusion drives both narratives closer because the goal becomes the provision of financial services, that is, access to money instead of its use to improve life.

As Roy puts it "what is at stake here is a crucial shift from the idea of development as social services and the improvement of human capital to development as integration into global financial markerts" (2010, 47). And CGAP's work is central to this: its "Key principles of Microfinance, endorsed at the 2004 G-8 summit" as Roy recounts, are a "set of market norms for "best-practice" microfinance: from the repudiation of interest rate ceilings and donor subsidies to the emphasis on financial transparency" (ibid). This new "set of indicators and benchmarks now dominate microfinance, measuring financial performance and producing what can be understood as a 'new politics of calculation' (Mitchell 2002, 8)" and "in this way, financial norms come to supersede social norms in the making of development" (Roy 2010 47).

Thus, this is perhaps an ontological difference between microcredit and financial inclusion as what changes are not just the technologies to include the poor but what changes is the end goal. As Shane commented, the provision of financial services is not just a tool to achieve a development outcome, the provision of financial services has become a valuable goal – and outcome - in itself. This shift has expanded the potential market of development interventions creating a new category of subjects "the unbanked"—which are now accessible, thanks to mobile technology- and has brought new players to the game. It has also *financialized development*, which is increasingly dominated by financial actors, practices, measurements, and narratives at various scales (Epstein 2005; Aalbers 2019). Prahalad's ideas of profitability at the bottom of the pyramid (2005) have succeeded in

bringing corporate power not only to invest in development initiatives but in transforming the agenda's priorities, practices, and ways of measuring impact. Criteria such as maximization and efficiency dominate the functioning of supposedly altruistic endeavors like Modelo Peru and Bim, while keeping the power stable: the rich get richer, the poor stay poor and maybe even in debt.

I consider it important to pay some attention to the language in which the statements of this presentation are written, that is as matters of fact.[47] In most of them, there are no specific agents doing the actions, and there are no connections established between statements. The language of development shares this factual quality with science and with economics, the bird's eye view that makes worlds as it describes them (Latour and Woolgar 1986; Lynch and Woolgar 1990). Or, to put it differently, detailed practices (of research, conversations, observations, and travels of people as well as of technologies) are transformed into representations, into an organized (and often evolutionary) tale.

Latour and Woolgar (1986) examined the ways in which a retrospective reading of scientific practices makes them appear as logically ordered processes, whereas a closer look at its micro-processes shows how order is produced from disorder through the reading and writing of specific data in specific scientific practices (see also Rheinberger 2010). In other words, a closer look displays how "the realities of scientific practice become transformed into statements about how science has been done" (29), or how practices are necessarily transformed into representations. Borrowing concepts from the Science and Technology literature (STS), originally produced to think about scientific practices and laboratories, to think about development practices, I suggest that CGAP material practices, like this Prezi among many other documents, are retroactively constructing a story in which mobile money appears within the frame and as a milestone in the "evolution" projected

[47] See Latour 2005 from matters of fact to matters of concern.

from microfinance to financial inclusion. In contrast, I argue that mobile money is not a milestone but an *enabler* of that shift. The Prezi is a retrospective reading of events in which mobile money is captured and "modeled" as a technical means for financial inclusion (understood as branchless banking for the unbanked).

Another move in this evolutionary tale, is the (at least partial) erasure of the past facilitated by digital technologies. For instance, CGAP once had a website called 'Microfinance Gateway' which was accessible under that name until at least 2018 (see Figure 1.6). Even then, it was already showing signs of transition to a new paradigm, with the slogan "The Microfinance Gateway is your global resource on financial inclusion." However, by December 2019, when I tried to visit the site again, typing www.microfinancegateway.org into a browser automatically redirected me to www.findevgateway.org. The website had been rebranded as 'FindDev Gateway - a program of CGAP,' with a simplified slogan, "financial inclusion for development". The problem with internet pages is that once they are rewritten by its programmers you can't access their prior versions—no past, just a permanent present.[48] At another scale, at the beginning of the chapter, I examined a similar example when Carolina became the first Minister of Inclusion in Peru and her ministry consolidated welfare programs and rebranded them as a new system. This example of changes in web addresses, names and slogans constitutes another piece of evidence not only of the shift I'm tracing (the evolution from microfinance to financial inclusion paradigms through CGAP's materials) but also of common practices in the field of development.

[48] Unless you are tech savvy (which most users, including me, are not) and know how to use the "wayback machine" or internet archive, and are lucky that the page you are searching is part of their archives.

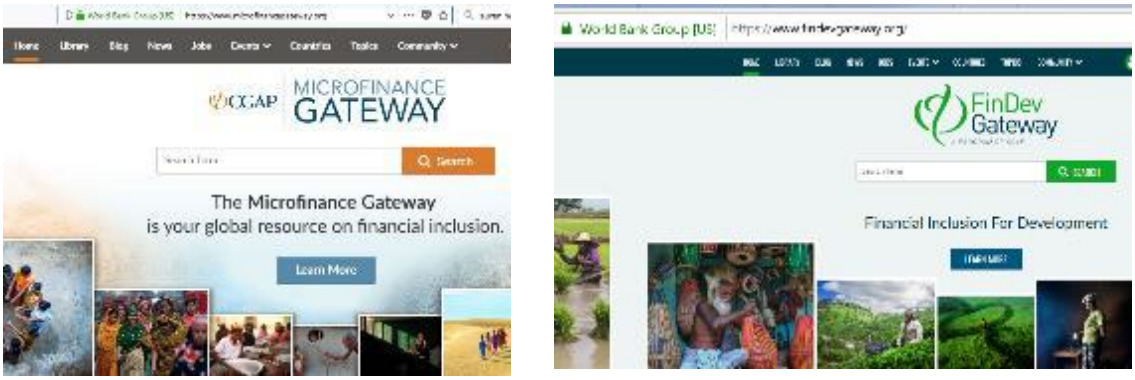


Figure 1.6. On the left, a screenshot of the Microfinance Gateway transitioning from microfinance to financial inclusion, August 2018, On the right, a screenshot from December 2019, showing the further transition into FinDev Gateway which replaces the now inaccessible Microfinance Gateway.

This model—financial inclusion through mobile money and other digital technologies imagined and disseminated as banking—is then the solution to a problem that has been historically documented through this 20-year timeline (and the reports, experiments, meetings, conversations, and agreements that this presentation summarizes). CGAP officials write this story post facto, as the result of looking back to their own institutional practices, the practices of bankers, and the practices of other related development institutions and centers of expertise. Reflecting upon these past activities is what organizes and rationalizes categories and stabilizes things as they appear in the presentation.[49] If, instead, we follow Pickering (1995) and do a real time accounting of the making of development (and of mobile money, and of financial inclusion), then through its specific enactments, things would cease to appear as stable as they do in the timeline.[50]

[49] These knowledge practices not only shape what mobile money could be once it is captured as banking, they also give traction to the proliferation of mobile money projects.

[50] In *Laboratory Life* (1986[1978]), Latour and Woolgar study the construction of scientific facts in a specific laboratory. They use an ethnographic approach to examine "tribes of scientists" and the emergence of knowledge in their practices (17). They argue that prior sociological studies were inclined to focus on the "social" part of the scientific practice or to divide between the "social" and the "technical" aspects of what they were studying. In contrast, Latour and Woolgar seek to understand how scientists use these distinctions as part of their activities, instead of interpreting, in the practices observed, what is "social" and what is "technical." Moreover, they show how, by studying the details of specific scientific practices, that distinction is blurred. As they point out: "a body of practice widely regarded by outsiders as well organized, logical, and coherent, in fact consists of a disordered array of observations with which scientists struggle to produce order" (36).

By following the timeline's five phases, it is possible to see how commercial banking and social development interventions were once separated activities that came closer together through microcredit experiments. It also shows that the emergence of mobile money gave traction to that bond, enabling a paradigm shift in development from microcredit to financial inclusion. But the shift is not only one of development practices and their technological means (mobile money); changes in development paradigms go hand in hand with transformations in the ways in which populations are classified. More exactly, designing development frameworks also involves *designing populations,* in this case, the transformation from the 'unbankable' to the 'unbanked'. There is no unbanked population out-there, outside and pre-existing these practices. These practices invented the unbanked, they didn't discover it (see Latour, Maurer 2012).

I should now illustrate this through a different enactment of mobile money. As I described, mobile money is a key element (an enabler) in the encounter of development and banking which results in financial inclusion. In fact, once it appears, the next phases in CGAP's timeline follow its path. It becomes an "obligatory passage point"—a necessary mediation in the formation of a network (Callon 1986; Latour 1988) —the stories of financial inclusion and of branchless banking cannot be told without mobile money. Likewise, the story of mobile money cannot be told without M-Pesa as it is becoming evident in the CGAP's timeline but also in the stories from the first section of this chapter, about the Peruvian e-money laws, when one of PDP's managers mentioned that *what was happening in Africa with M-Pesa scared banks*. Thus, in the next section, I explore how M-Pesa started and the "inscription practices" (Latour and Woolgar 1986) that transformed it into a mobile money model by way of the data it provided.

The Kenyan M-Pesa: mobile money's obligatory modeling point

In Kenya in the mid-2000s, people were buying airtime and sending it via text messaging (SMS) from one phone to another located in a different town. The SMS receivers, instead of adding the airtime code to their cellphone's accounts (toping up their balance), *cashed out* the airtime code back into money (cash) at an airtime agent—a telecom's local point of sale which was usually a small shop, or, in the most basic form, a person with a cellphone (see Figures 1.7 and 1.8).

'Airtime money' emerged as an unintended use for cellphones, as a creative way that people found to send cash to their relatives and to bypass the high service fees of banks and cash transfer companies such as Western Union, which also lacked offices (or agents) in the rural towns where those services were needed most. Soon, a telecom operator (Safaricom/Vodafone) transformed that social practice –in which people were already using Safaricom's existent network of airtime agents for money purposes—into a business: M-Pesa, a formal service for cash transfer through mobile phones.



Figure 1.7. M-Pesa street shop, Nairobi, Kenya, July, 2023. Credits: Gang Wang



Figure 1.8. M-Pesa agent, Nakuru, Kenya, August, 2024. Credits: Alicia Eastvold

With M-Pesa, in which M stands for mobile and Pesa is the Swahili word for money, Safaricom became one of the first mobile network operators scaling up, from running pilots on cellphones for microcredit purposes to providing a formal mobile money transfer service.[51] What started in 2007 as an experiment building on a social practice of sending airtime and reconverting it into money was after a few years a very successful business for Safaricom/Vodafone, the telecom corporation that designed it, with more than 17 million users—60% of the Kenyan adult population—(Omwansa and Sullivan, 2012; Rea et. al 2016). Vodafone also deployed M-Pesa services in 10 other countries.[52]

Since its beginnings, the Kenyan Bankers' Association, representing forty three banks, opposed this project with the claim that M-Pesa was doing banking without complying with the regulations banks are subject to. The bankers asked the Central Bank of Kenya to regulate this phone-money, a business from which they were so far excluded. For Michael Joseph, Safaricom's CEO at the time, telecoms and banks were fundamentally different businesses:

> "Banks are conservative businesses whose model is predicated on a relatively small number of high-margin transactions. Mobile network operators (MNOs), by contrast, (…) generate profits from a high volume of small transactions. MNOs can scale fast, banks can't. MNOs can reach their clients in seconds, banks can't; MNOs cater to everyone; banks cater to the well heeled." (Omwasa and Sullivan 2012: Loc. 678-681)

According to Michael Joseph, M-Pesa was "filling a gap that the banks have left out." Its real competitors "were money-transfer services like Western Union and PostaPay" (Ibid.). After a long

[51] Omwasa and Sullivan 2012 narrate the story of Safaricom conducting pilots partnering with development institutions to explore microfinances options through cellphones.
[52] As of 2019, Vodafone offers M-Pesa services in 10 countries: The Democratic Republic of Congo, Egypt, Ghana, Kenya, Lesotho, Tanzania, Mozambique, Romania, Albania and India. In: https://www.vodafone.com/content/index/what/M-Pesa.html (accessed on 04/04/2019).

legal review, the Kenyan regulators determined that even though it was a telecom company dealing with money, Safaricom was not doing 'banking.'[53] The Central Bank's legal counsel provided

> "a legal opinion that M-Pesa was not engaged in banking activities. Any cash exchanged for e-money was the property of the customer, not of Safaricom. The customer's cash is not lent, as banks typically deploy deposits, but stored safely in a trust account. And Safaricom paid no interest on customer money, again confirming that the money was not a deposit. When customers wanted their money, they went to an agent and cashed out." (Omwasa and Sullivan 2012: Loc. 701-704).

Thus, this mobile money platform, that for the Kenyan regulators examining how money was held and circulated was not the same as banking money, and it was "not subject to onerous bank regulations for deposit taking" and to "'know your customer' (KYC) identification and branch-banking laws" (Ibid).

However, 'not banking' is, I argue, conceived in terms of banking. The comparison captures it. "What is banking?" becomes an interesting ethnographic question, in addition to a financial question. It is an ontological question tout court, or, for Latour (2005), a "matter of concern." When we ask what banking is, the question is, therefore, what kind of world banking makes.[54] Here, 'banking' gathers together deposit taking, interests, branch-banking laws, high-margin transactions, and deposit taking regulations. Banking also brings the right of banks to lend the money from customers' accounts to other people; money that customers assume is in their accounts but it is not backed up, so that they cannot take it whenever they want. Banking speaks of 'banked' people, who

[53] So Safaricom didn't give interest or generate loans using the money stored in the accounts of the M-Pesa system. Instead of acting as saving accounts, "the funds held in the M-Pesa system were in a trust account" and "could not be touched by Safaricom" (Omwansa and Sullivan, 2012: Loc. 348-354). Safaricom backed all the mobile money, or 'e-float', as mobile money professionals call it, "by putting cash into a trust account, and could not touch that cash or take any interest from it," so "there [was] no risk to the banking system" (Ibid, loc. 688-691). In addition to that, M-Pesa had a relatively low transaction limit of KShs 75,000 (less than one thousand dollars) and electronic records of all transactions were maintained daily and were always available.

[54] I thank Jake Culbertson for his comments on this.

are described here as “well heeled.” And more than anything, dealing with money is assumed to be the territory of banks.

Nonetheless, mobile money was successful in Kenya in the first place precisely because it was ‘not banking.’ People didn’t require bank accounts to use it, only cash and access to an M-Pesa agent for cash in/cash out purposes. M-Pesa addressed an existing need; it made cash digitally travel from point A to point B and be available where and when people that didn’t have bank accounts needed it the most. It did so by using a technological infrastructure made of phones and human agents that excludes, or at least decenters, banks from the business of money. In doing so, I argue, the Kenyan mobile money project displayed the possibility of a future in which money is not tied to banking fused with development, as the CGAP presentation modeled and exhibited in the prior section of this chapter.

For the Kenyans, at least in M-Pesa’s first years, mobile money was ‘not banking.’ That was the novelty, and precisely what made this mobile money project travel as it did and generate so quickly a transactional community which trusted phones but not necessarily banks. M-Pesa (and other mobile money services after it) disrupted the banking industry, with telecom operators supposedly “muscling into banks’ territory” –since money, and its storing and transporting infrastructures, were assumed to be the territory of banks (Rea et. al. 2016). These services showed how things could be otherwise—how money could travel digitally without being controlled by banks.

I consider it worth asking what kind of disruption this was for banks. What did they lose? Banks were disrupted not precisely because they lost clients or markets (they were not, after all, offering any other alternative for those who started using M-Pesa). It seems for me that this was more like a *speculative loss*: they lost those who could *eventually* become their clients, and the money that

could *potentially* be managed by them. They lost the possibility of collecting that money to make finances.[55]

Thus, with M-Pesa, the solidity of the *global* imagination of money tied to banking was disrupted, as was the *local* dominant position of banks in the control of infrastructures for money transportation and administration. This was possible because the Kenyan regulators approved this state of affairs. This situation was perhaps facilitated by two factors particular to this specific case. The first one is the fact that in this case the regulation came after the innovation –which is not the case in Peru where banks first design and lobby a favorable regulation for them to then develop a mobile money project to protect themselves from a situation like the one M-Pesa presented – a telecom disrupting their potential territory. The second one is that in Kenya, the Central Bank had a dual role in this initiative: it was both a regulator of it and a stockholder in Safaricom, invested in its success. Mobile money poses "challenges to how states regulate money flows" (Rea et. al. 2016), and in this case, the law allowed telecom operators to enter the business of money. Safaricom, the telecom producing the innovation of mobile money was endorsed by the law, which made its project weightier. There is "no technology without rules, without signatures, without bureaucracies and stamps" (Latour 1996, 45); the law here offered relative durability to the alliances making the innovation.[56]

[55] As Omwasa and Sullivan tell, even if Safaricom was providing cash transfer services through mobile money to people that were not part of the reach of banks, there were other impacts on banking. "Another secondary impact on banks was that as more money flowed from the cities to the rural villages, banks were under the strain of supplying liquidity, moving cash to meet the demands of agents who were flush with e-float. The banks were absorbing costs to help M-PESA run smoothly! The bankers essentially accused the Central Bank of operating with a double standard—of giving Safaricom a free ride to undercut their long-established business. As one banker said: "The Central Bank has rocketed M-PESA to the front of the world stage" (2012: Locations 659-663).

[56] Here I'm thinking with Latour's Aramis (1996). Latour explains that law is a way of stabilizing variation in actors' sizes, in their representativeness (44). "In a project's history, the suspense derives from the swelling or shrinking of the relative size of the actors" (45). Variability can never be eliminated, but "its scope can nevertheless be limited" through law. "Law itself is no different from the world of technologies: it is a world of flexible technologies coming to the aid of even more flexible technologies of interest in order to allow slightly more solid technologies to harden a bit" (45). Law makes a project weightier and reduces the flexibility and variation in sizes of the actors; it offers

This mobile money initiative produced data about the money practices of people who were not so long ago considered 'unbankable' – that is people who were impossible for banks to even imagine as potential clients because they didn't have any means for generating information about them. As Carolina explained to me: "[these people] don't work with you, they don't use your systems, they don't have debit or credit cards." And with mobile money "suddenly now, you know them, and you have recurrent data about them" Carolina continues, "and with that data you can think what to offer them", which applies for development agencies, telecoms and banks alike. People's transactional profiles (and potentially their cash) became accessible to national and international players—not only telecom and banking industries, but also international agencies like CGAP, the United Nations, IMF, and the World Bank Group.

This is where the CGAP presentation and the M-Pesa project meet, where the world of development practices *translates* this project into an example/model of a tool for financializing the poor, and in doing so, refashions mobile money that was locally defined as 'not banking' into something globally understood as 'banking.' Thinking with Latour (2005), development practices transport this case study to the conferences that Carolina mentioned at the beginning of the chapter, but this transportation is not without transformation (translation), from not banking (the radical opening that M-Pesa brought to the table) into branchless banking (as showed in detail with CGAP's presentation).

The examination of the data produced by M-Pesa showed that people classified as "rural", "poor," and as "informal" participants of local economies in that country did move money around. Individually, the amounts transferred between mobile wallets were minimal, but with millions of

relative durability to the alliances making the innovation. "After it is signed, a project becomes weightier […] It can still be overturned, but one would have to work a little harder to prevent it from righting itself, from returning to its former position. […] By accumulating little solidities, little durabilities, little resistances, the project ends up gradually becoming somewhat more real." (45-6).

users the picture changes. This local data provoked questions about the potential market of the "poor", their access to cellphones, and their financial practices, which, in turn, set in motion more research, now conducted at a different scale.

In 2011, "the World Bank – with funding from the Bill & Melinda Gates Foundation and in partnership with Gallup, Inc.– launched the Global Financial Index or Findex in over 140 countries to study how adults save, borrow, make payments, and manage risk." [57] Reports listed more than two billion people across the world as "unbanked" (no longer "unbankable"), and as "under-served" by financial services, but most of them had access to a cellphone (Global Findex Database, 2012).

As the CGAP presentation discussed in the prior section showed, the new ability of phones to receive and send money opened up possibilities for the implementation of development policies. It also opened up the kinds of development policies these institutions were designing in such a way that from the early 2000s to the beginning of the second decade of the 21th century, there is a shift in development policies from promoting inclusion through microfinances, in the form of credit and debt for the "poor," towards promoting savings and access to a bank account in what is now widely known as financial inclusion. Microcredit is now one of the options in the financial inclusion menu, in which a bank account is the post-millennial "first brick for a better future."

Of course, there is no such a population as the 'unbanked' prior to these mobile money projects and development policies; the category appears when reimagining who developing people are and why they now need "mobile banking" (Maurer 2012). Finances become the new language that the so-called 'financially illiterate' or 'unbanked' must learn to be 'included' and developed.[58]

[57] http://www.worldbank.org/en/news/press-release/2015/04/15/massive-drop-in-number-of-unbanked-says-new-report

[58] Finances here are "modern" finances, a particular kind of subject-making / world-making in which planning for the future life events and administering resources are tied to a range of banking products such as savings accounts, checking, credit cards, loans and to forms of money investment (insurance, mutual funds, retirement plans).

Phones become a tool to access a transactional account (to send and receive money), which can potentially become a savings account. This is the first step in the financial ladder in this making of financial subjects and worlds.

As we can see, what began as 'not banking' was later reframed as 'banking.' This was not only achieved by the global banking industry "muscling back" the advances of telecom operators in the business of money and in the making of the digital "rails of payment" for the circulation of money. It was also achieved because the world of development (which was becoming closer to the world of banking) also spoke of "banking" through phones as a means for financial inclusion.

The "inclusion" imagination is about bringing those who are designated (and *designed*) as excluded according to these institutions' policies in to the "inside," to what supposedly already exists.[59] Instead of imagining other futures possible beyond the existent legal-financial infrastructures with the help of what the M-Pesa model showcased, development agencies and their financial partners continued working under the assumption that money when it moves from cash to digital must be the territory of banks.[60] This is how mobile money was presented, for instance, in the CGAP Prezi, described earlier: phones seemed to be a door or channel for banking.

To push this idea a bit further, what these knowledge/policy/world-making institutions did with mobile money was to locate its emergence *within* their own practices of microfinance/financial inclusion through banking. Thus, mobile money (and phones) were *already* "inside;" in this way, people using phones as mobile money devices could be moved in to the "included" side. Phones converted cash into e-money; mobile money converted the unbankable into bankable people. Once the phone was a wallet, people entered the reach of banks. If, as per their statistics, there are more

[59] Shane commented to me that in the early discussions of this transitions, some practitioners preferred the term 'financial access' but 'financial inclusion' ended up winning.

[60] I discuss the idea of formalizing cash economies equals banking in the Introduction and it returns elsewhere specially in Chapters 4 and 5.

phones in the world than people, then there is no unbankable people anymore, only unbanked ones. It is just a matter of time.

Also, the data produced by M-Pesa –of money circulating through phones, of users, of legal debates, of regulation, of technology choices- entered the reach of different global players (such as CGAP, the Gates Foundation, Better than Cash Alliance, and Alliance for Financial Inclusion) and through them, traveled to state bureaucrats and bankers in many different countries, among them, Peru. These global players produced and shared "lessons learned" and "good practices" extracted from the M-Pesa "case study" that were, in turn, *modeling* what mobile money could be and could do. In the next and final section, I return to my conversations with Carolina to explore some of the global, yet specific, conversations in which the Peruvian mobile money participated that connected mobile money examples and produced a Model with capital M.[61]

Global conversations connecting mobile money examples and producing a model

Carolina narrated her 2013 tour of Cusco with the World Bank's former president (2012-2019), Jim Yong Kim, a Korean-American physicist and anthropologist:

> "When Dr. Kim came to Peru, we arranged a visit to Cusco because he wanted to speak with users of poverty alleviation programs. The topic of financial inclusion emerged very naturally in the conversation with the women of Juntos.[62] [Jim Yong Kim] makes his speech, someone translates it, and at the end he says: 'Well, is there anyone who wants to ask me anything?' And there was one lady that was fantastic, her name was Fidela; I can picture her clearly. She stands up and says: 'Look Mister (*A ver señor*), you are the president of the World Bank; could you tell the [Peruvian] National Bank to open more bank offices (*agencias*)? Here we stand in very long lines; the grandpas have to stand in awful lines to collect their retirement pension.…' She was so nice, it was obvious for her that the National Bank would hear what the World Bank could say to it. Dr. Kim laughed."

[61] See Tsing 2004 on global connections.
[62] The Programa Juntos is a conditional cash transfer program to alleviate poverty in Peru, run by the state.

Carolina commented that financial inclusion was something that development practitioners and state technocrats were already talking about, but the scale changed when some institutions showed interest in the issue. She explained that it was this World Bank president who introduced this topic to the institution's agenda. She continues:

> "[In that visit], we talked a lot about financial inclusion. And I understand that in many of his visits around the world that year [2013], he gathered a lot of insights about that topic. At the end of the year, the World Bank launched its strategy of Universal Financial Access for 2020."

As we can see, this anecdote allows me access to some of the infrastructures of expertise in which mobile money is made into a speculative model for financializing the poor, and into the intimacies through which it is done (See Figure 1.9). A tour around the world made by a particular person in a strategic position collecting local anecdotes and conversations with technocrats in different countries, enabled the crystallization of financial inclusion as a global dream, in which mobile money is a tool for banking and banking equals inclusion.

In 2015, the World Bank chose twenty-five priority countries in which they committed to work to financially include (or "to bank") one of the two unbanked billion people in the world. Peru is one of the priority countries. Kenya is also on the list, along with India and China, among others. Most of the people classified as 'unbanked' by the World Bank's statistics live in India (20.6%) or China (11.6%). In comparison, Kenya (0.3%) and Peru (0.8%) do not add much to the billion-person goal; they are small countries. However, I argue, they are on the list because they are significant pieces in the modeling of mobile money. Kenya is the "case study" (an example of how mobile money *was* done—led by telecom operators) and Peru was, at the time that list was decided, a speculative model for the new generation of mobile

money—led by associated banks and aiming at financial inclusion. Peru also had all the development infrastructures in place to measure and count and report (see Chapter 2 on this). As I said at the beginning of the chapter, the Peru Model has been circulating as a successful model for mobile money, not in terms of users or of money in the pipes, but as the closest model to what mobile money *should be*.

Carolina explained to me that the Gates Foundation, a major player in the mobile money global conversations, developed ten "design principles for the digital payments system" and the Peru Model had nine of the ten features.[63] She goes on: "the truth is that we are in the [World Bank] list because we were doing everything 'by the book', so for them it is good to have this country to show as an example." Carolina referred to Peru as being done "by the book" (which she said in English) even when the book in question (the Gates' design guidelines) was not actually ready while she and her team were designing the Peru Model. It is a design by the book *avant la lettre.* It is a model by the book before the book that then follows the Model (with capital M) from the book. A model "by the book" is a currency too, even when it is only a model in presentations, documents, and reports, because it garners more investment and support. This is also what makes it speculative.

This latter quote allows me to further explore the difference between models and examples, and between kinds of examples. Carolina refers to Peru as an example of doing everything by the book—that is, an example of being the experiment closest to what a model of mobile money should look like according to these institutions. Kenya, on the contrary, is another type of example, of a kind of mobile money that is now superseded by the model, and that we are not supposed to duplicate.

Within these infrastructures of expertise and their knowledge practices, M-Pesa is technically an "older example" in despite of its actual success in terms of users and money circulating through its

[63] Bill and Melinda Gates Foundation. The Level One Project Guide: Designing a New System for Financial Inclusion, 2016.

pipes, a success that is still going in 2024 as I am revising this chapter, which no other mobile money project in any country has reached so far.[64] Rather than working as an example *of* mobile money, as it was in the beginning, it has progressively become an example *for* the making of the mobile money model, which will produce its own examples in turn. Speculative models bring new infrastructures into existence by changing the imagination of things. The model retroactively says that this infrastructure (M-Pesa) is actually part of a future infrastructure that is different (the model by the book which the Peru Model prototypes). The model stages infrastructures in such way that what used to be the world (mobile money led by mobile network operators doing 'not banking') is now just a step into a different one (mobile money led by banks doing financial inclusion through banking).

However, as I mentioned in the introduction, the Peru Model only works as a speculative model for some time; once its "pipes" are built (Bim) it becomes a descriptive model expected to be superseded by the new digital financial services to come. In fact, as of 2019, many associations of banks in different countries, such as in Ecuador with Bimo and in United States with Zelle, have proposed their own mobile money platforms. And every iteration implies processes of comparison and taking and discarding features from older models to the point that even Facebook publicly entertained the possibility of its own currency (Libra) governed by the Libra Association, a self-regulated exclusive club of tech giants, payment corporations and venture capital that bypasses both banks and state regulators, and is modeled by borrowing and learning from previous mobile money iterations, including Modelo Peru.[65]

The last story that Carolina told me is about the networks of elite institutions and their knowledge practices involved in this future-making through speculative models. It is a story about

[64] Of course, M-Pesa has changed and adapted many times, and its transformations are beyond the scope of my research, but I just want to make clear that M-Pesa of 2024 is not what it was in 2007 or 2014, when these modeling processes recounted in the chapter were happening.

[65] In 2019, Facebook had a collaboration with Bim and Modelo Peru, only to then unilaterally terminate it and launch Libra (a project later sold to another company).

worldings, by way of another key global player, Christine Lagarde, a lawyer, former French minister of finance, and managing director of the IMF from 2011 to 2019, when she stepped out to become the President of the European Central Bank. Whereas the World Bank produced, through the Global Findex, the research that located (or, perhaps more accurately, *designed*) the more than two billion 'unbanked,' the IMF was responsible for the research that connected financial inclusion with economic growth. For Carolina, this was the link that scaled up the topic of financial inclusion within the international community and within national governments.

> "*La señora* Lagarde from the International Monetary Fund (IMF), who has become a fan of the topic of inequality, started to ask around within the IMF about financial inclusion. For the first time, the Fund does research about it to understand what the effect of financial inclusion is on the macro level. Until that point, all the justifications that we used [for financial inclusion policies] were explanations at the micro level: this is good for the families, for the poor, for the microentrepreneurs; this is important for them. With this, each of them can be the best. And she [Christine Lagarde] does these global studies in the IMF and finds that the countries that foster financial inclusion grow more, they have more financial stability as systems, and they reduce inequality."

Before the IMF research and reports, mobile money, microfinances, and financial inclusion were all promoted because they were good for poor people and for their lives. These were "micro" reasons. Through these people in key positions in global institutions (IMF, the World Bank, CGAP, and the Gates Foundation, among others) talking to each other and financing research on this co-relation, the link between "it is good for the people" and "it is good for economic growth" is created.

Mobile money gave traction to financial inclusion; through this, it cast the link between micro and macroeconomics in new terms. As Carolina commented, once this link of the micro level and the macro level is produced,

> "So, the Fund buys it (*el Fondo se lo compra*). Lagarde becomes an advocate for financial inclusion, too. So, today [financial inclusion] is a topic of the international community; it is now a generic issue, an umbrella. Different actors have been joining forces, each from its own perspective. That has changed the discussion; there are more

> resources and visibility. This allows countries to make national commitments. There is more external pressure. It is no longer about the good government official who has a good idea."

Financial inclusion is now a self-evident issue, and it works as a justification (an umbrella) for the making of infrastructures; for the building of digital financial 'pipes'. A speculative model is a reframing of the world in terms of what the world could be. By reframing history (when cellphones became wallets they were doing banking transforming the unbankable into the unbanked), there is also a reframing of what the world could be. It could be a world in which bankers control mobile money; in which the money from the 'poor' enters the world of finance through banks as well as the money and the 'unbanked' enter the world of economic speculation and growth.[66] With Christine Lagarde's institutional support establishing a new link between micro and macrolevels, financial inclusion through digital technologies like mobile money makes 'inclusive growth' thinkable. This wording /*worlding* just keeps adding up.

Mobile money as a speculative model is a retelling of history that claims that *this* is what has been evolving. And what makes the model powerful or what grounds it, or legitimates it, is the coming together of the people who make the reports, who can then remake the world within that imagination (through specific laws, pipes, etc.). It both shows that these people can talk to each other as "assemblies of spokespersons" (Latour 1996), and says that if we can imagine this model, then it is possible, because the people with the power to change worlds are behind it. In this way, 'mobile money→financial inclusion as banking→ inclusive growth through the financialization of the poor' legitimates its own inevitability.

[66] In this way, it is similar to what Murphy (2012; and 2017) explores through the figure of the Girl as a contact point between feminism and capitalism. Every birth avoided is a girl that becomes educated, becomes more powerful, helps her family, and in this way saves the economy. In the end, the point is to link the fate of poor girls to economic growth. And a similar move takes place with mobile money through the figure of the unbanked.

As this chapter showed, I have found that the worlding that 'mobile money' feeds through these global sociotechnical assemblages (Latour 1991) is one in which "the poor" needs to be included in the financial system to make economic growth sustainable in the future. Also, it is one in which access to digital money equals "banking," a private for-profit business, rather than conceiving digital money as a non-profit public service just as cash is (Swartz 2017).

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In my conversation with Carolina in May 2016, the one that started this chapter, I asked her about the evolution in numbers of users and transactions done in Bim, which was at that time the newly launched mobile money infrastructure that the Perun Model produced. She said that they have reached eighty thousand users, only ten thousand more than what they had the week after the service launched in February 2016. She added that very few people are doing transactions.

However, she didn't seem worried; on the contrary, she was very confident that it would eventually happen, people would start using the mobile money service—or some other modeled in its image and beyond. I now understand her; this seems to be the direction in which the world is going (not naturally, of course, but through the many practices and connections and networks described in the chapter). There is a faith in the model because it is grounded by "bigger forces" (the development international community, the law, the banking system) so, from her perspective, there is not much to worry about; there is nothing that needs to be proved because it has already been proven by all the entities involved, gathering together and making it into a model. That is another way to define a speculative model: no matter what happens with the pipes, it doesn't even matter exactly what it is (pipes or not), what it matters is that it sets in motion other processes; it is working already.

Fast forward to 2024: more than global assemblages, these are temporal *assemblings*, always in the making, constantly changing and even as it was happening mobile money and financial inclusion were already becoming things of the past. By 2020, the prime time of financial inclusion had already passed; it was inevitable, but it is already over. By 2024, there are millions of users of mobile wallets via smartphones in Peru. No bank is concerned about what seemed a threat to their business posed by telecoms back in early 2010s—though they have other concerns, particularly with more current 'big fish' like tech giants. As Carolina says: *Now, it's all digital, digital, digital and nothing else.*

CHAPTER 2

The women in the picture: fintech tests 'rural women'

Introduction

The woman in the center of the picture smiles at the camera, she knows she is being photographed. She wears a brown wool hat common in the Peruvian Southern Andes' towns. She has long black hair, braided I imagine, as is customary. She is wearing a *mandil* (apron), with big pockets on each side, on top of her white blouse and her traditional round skirt. That type of mandil signals that she is a businesswoman, perhaps a street vendor, or a greengrocer at the weekend market, or a small shop owner. One of the mandil pockets may serve her to keep bills and coins for change. The other, quite possibly contains thin plastic bags to pack the merchandise of her *caseros* (clients). Between these pockets, the mandil has a third one, with a zipper, a good place to put important belongings, perhaps the woman's ID, some higher denomination bills, and her cellphone. In the picture, her young daughter grabs her by the mandil, her back turned to the camera. Like her mother, the girl also wears an apron on top of her clothes.

The woman holds a cellphone in her right hand. That small, non-smart –and now almost obsolete- cellphone is at the heart of the mobile money model Modelo Perú. There is another woman on the right-hand side of the image, holding a young child with both arms. She and the baby are looking at the sign behind them, a banner advertising different digital payment services like *recargas virtuales* (airtime top up services), and they all stand outside a local shop in a stone paved street which conceivably dates back to colonial times. It is a sunny day, and the two women and their children seem to be waiting in line to get into that shop.

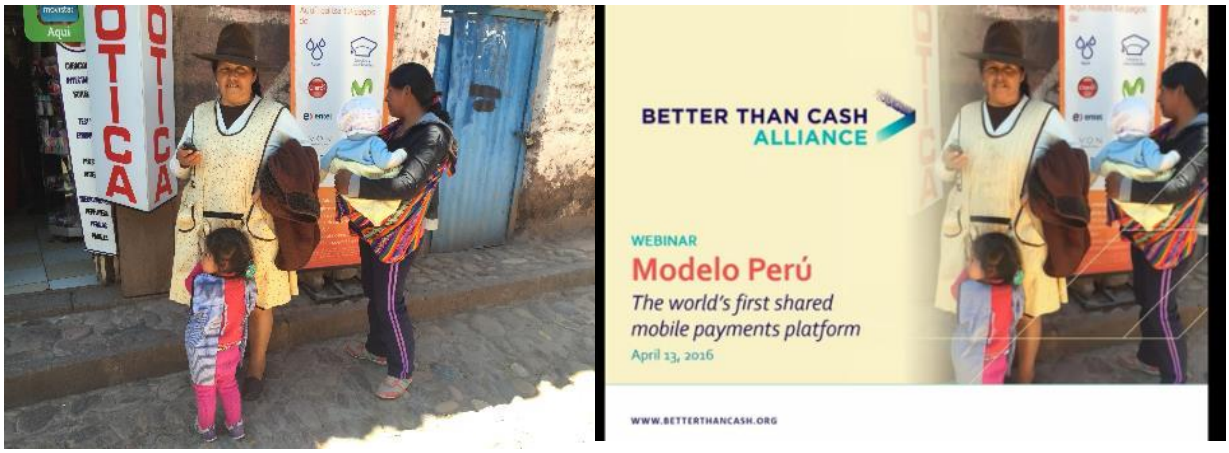


Figure 2.1. A picture (on the left) that was often used to internationally present Modelo Perú (Peruvian Model) like in this Webinar (on the right) organized by the Better than Cash Alliance (In: www.betterthancash.org). Image credits: Jeffrey Bower and BTCA.

Modelo Perú proponents and its international consultants from the Better than Cash Alliance have often used this photograph as a key feature of slide presentations, webinars, and online articles to internationally present their mobile money proposal (figure 1). The picture tells a story: The women are using their cellphones as transactional devices in their local town; they are replacing their cash with digital payments–or so the story goes. This story is well-known as it was redundantly told in the period that my research covers (the 2010s to early 2020s) by global development organizations, tech philanthropic foundations, international NGOs and microfinance institutions alike, always using images of women of color holding cellphones (figure 2). For the opening picture to tell that story, it does not circulate alone but along with catchy phrases and texts and similar pictures of global campaigns to fight poverty via financial inclusion. Similar stories reiterated over and over with different women in the images are not produced for local consumption (i.e., among other women like the ones in the pictures) but to be exported. Often written in English, their narrative is crafted for audiences located far away from the so-called developing countries and their camera-alluring towns around the world in which pictures like this one has been taken.

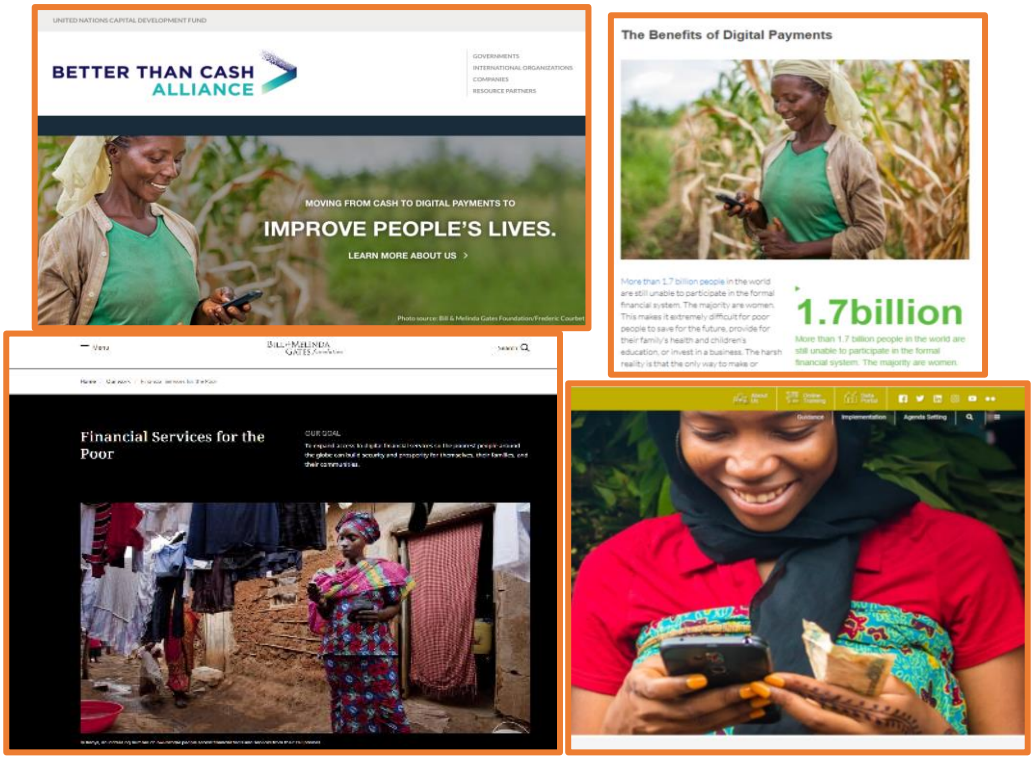


Figure 2.2 A collection of pictures of women of color with cellphones as transactional devices, screenshots from different global development alliances and organizations websites: Better than Cash Alliance, Bill and Melinda Gates Foundation and the Alliance for Financial Inclusion (AFI). As of December 2023, the Gates Foundation picture remains in place, the pictures of the other institutions have been replaced by other pictures, mostly of women. Credits: BTCA, Gates Foundation and AFI.

As Ananya Roy states, these women are the 'visible poor' of 'millennial development'.[67] Their images can be seen in the websites, brochures, presentations, and banners of international development organizations and their industry partners. They can be seen in the social media channels of these institutions, the corporate social responsibility blogs and posts of companies supporting these initiatives, in public and private spaces (metro stations, supermarkets), all of it in cities of the

[67] In my dissertation, drawing on discussions from the field of Anthropology of Development, I consider development as both an institutional field and a discourse that seeks to transform society by using networks of knowledge and power to turn entire groups of people into populations as objects of knowledge and management (Escobar 2011), labeled as 'the poor,' 'the rural poor,' and, more recently, 'the unbanked.' In this chapter, I return to this discussion in section called: ***A focus group and subjects testing poverty.***

'developed' world, where the donors –from lay people to companies and governments– reside. These images populate the imagination of global north citizens who, paraphrasing Roy, are *empowered to empower* people in the global south through various accessible and convenient means. These include, for example, microdonations when they shop online or in person at a socioeconomically conscious supermarket which turns these funds into microloans for women entrepreneurs in Central and South America, Africa, or South Asia (2010, 2). Their individual acts of consumption have the potential to make a difference and do good in the world; in fact, everyone can do their part: development is thus turned into a commodity (ibid, 35).

Moreover, as I suggest in this chapter, these stories are to be consumed and invested upon not only far away from where the pictures were taken but by the same networks of global poverty policy-making and financial development which prompt their production in the first place and to propel a future that goes in the direction that the images signal. Take for instance, the Better than Cash Alliance (BTCA) which participates in the production and distribution of the image that opens this chapter. Housed at the United Nations in New York City, the BTCA is a partnership of governments, international organizations and companies "that accelerates the transition from cash to digital payments" to advance the UN's Sustainable Development Goals.[68] BTCA operates its strategies in what they classify as 'developing countries,' a category that includes Peru, where most people use cash instead of banking services.[69] The Peruvian government is one of BTCA's founding members, and the Association of Peruvian Banks (Asbanc) conceived Modelo Perú –and their mobile money platform named Bim– with international support from BTCA.

[68] "About the Better than Cash Alliance," Better than Cash Alliance. Accessed September 19, 2021. https://www.betterthancash.org/about.

[69] 60% of Peruvians only use cash for transactions. Accessed August 20, 2021. https://revista.andaPerú.pe/pagare-en-efectivo-modalidades-de-pago-que-los-Peruanos-utilizan-para-sus-compras-de-productos-y-servicios/

At BTCA, what is better than cash is digital payments; cash, or more exactly, the pace at which it travels is a problem in need of acceleration, an issue I return to and explore in detail in the next chapter. The photograph suggests that women like the ones in the picture are using their cellphones for payments instead of cash in Peru, and thus, playing their part in the acceleration that BTCA promotes. The picture may be a promise, it may be staged, it may be the result of a pilot and not an accurate representation of the everyday life of the women in the picture. Nevertheless, the story that the picture conveys (i.e., women of color—the visible poor—use digital payments through cellphone instead of cash for her own progress) captures its audiences' imagination, it highlights the "charismatic promises" of this technology (Ames 2019). A charismatic technology makes "both technological adoption and social change appear straightforward instead of a difficult process fraught with choices and politics" (ibid, 11). Its allure relies in that while "it promises certain benefits, it simultaneously confirms that the ideological worldview of its audience is already right" and the intervention only amplifies it (ibid, 12). Then the project's feedback loop seems to be completed when supposed *evidence* of local women of color using cellphones for digital payments *returns* to international forums in the form of these images, fostering in turn more investment and efforts in that direction.

The picture may tell the story of women using basic cellphones for payments, yet that is not what I encountered on the field. Besides their presence in this and other pictures alike, these women are hard to find in any other of Modelo Perú's related places and practices. They do not seem to have participated in the design of the mobile money platform called Bim and much less so to be using it—the latter seems surprising, but maybe it is not. The picture tells a story, and I wanted to learn about the story of the picture. My chapter is about the making of this picture, which was taken during the testing phase of Bim, the resulting mobile money platform from the Modelo Peru partnership of banks. As I follow the practices that made the picture and the practices in which it participates in

turn, I examine the role that women like the ones portrayed on it play in financialization processes, including the financialization of development.

I understand financial inclusion practices as *financial expansion practices* (or financialization) relying, as it was the case with microfinance, on the extraction of labor and capital from 'the poor' and particularly from women like the ones in the pictures (see Roy 2010; Karim 2011; Kar 2018; Radhakrishnan 2022). Though in the case I analyze in this chapter this extraction does not happen in the same ways as in previous cited work on microfinance. My research suggests that financialization not only relies on capitalizing women's money and labor, but it can also happen by capitalizing women's images. For the women in the picture were not users of the mobile payment system designed by the Modelo Peru partnership of banks but *testers* of that technology before it was released to the public, and thus, operational. In other words, it is not their money that circulates through the banks' mobile money platform, and it is not even clear that the banks were truly interested in extracting these women's money, but they were certainly interested in capitalizing their image.

My account, thus, follows the images of the women as visible poor (and not the lives of the women represented as poor in the images) and how they participate —as representations— in the production of authoritative knowledge on development as financial inclusion. I suggest that they are particularly needed to generate the charisma of this project, needed in turn to generate capital and support, and as such they are an integral infrastructural piece of Modelo Perú. I trace, paraphrasing Ananya Roy, the global chain of production, circulation, and consumption of development as a commodity in the form of images of 'rural poor entrepreneurial' women. But these images, unlike those she analyzed, do not represent fully blown microfinance projects in 'developing' countries, but a for-profit financial inclusion proposal that the bankers are testing. The picture of a test conveys a (fictional) reality elsewhere that seems believable and that no one will look very closely, and which

feeds the investment loop with increased speed. In their attempt to *accelerate finances* (through the transition from cash to digital), the collaborations of poverty experts with businesses (banks) also accelerate development practices. By following the women in the picture, my account traces, in turn, how financialized development looks in practice in the field.

From the picture to the test to the speculative yet empirical women: Structure of the chapter

This second chapter centers on the testing phase of the mobile money platform Bim owned by a partnership of banks known as Modelo Perú (Peruvian Model). It is mainly based on conversations with Modelo Perú's engineers, managers, and international consultants that organized and deployed this testing phase. The chapter seeks to understand the role played by the women depicted in the pictures in this financialization project, but it is more about the pictures of the women (and of women as abstractions needed for mobile money's design purposes) than about the real women who participated on the test and their transactional practices –with or without this technology–. There is a practical reason for it: the test phase of the platform happened before my long-term fieldwork in Perú, I didn't get to meet the women.[70] But more so because my writing follows what I encountered in the field: it turned out, as my chapter shows, that rather than providing feedback to the design process, the test was more of a training and photographic session, and its resulting images of women testers portrayed as users of this technology served to present Modelo Perú to its donors and collaborators as well as to national regulators, as purveying "the poor" with a seamless transition from being unbanked to experiencing financial inclusion. Instead of

[70] During fieldwork I explored the possibility of traveling and talking to them but no one in the Modelo Perú team could remember their names or what exactly were their business.

understanding that these women participated as potential receiving subjects of these interventions, I propose their presence was representational and as such a necessary infrastructural piece: they had to be in the picture indexing the feasibility of inclusion and to propel the digitization of cash economies, a common interest of banks, governments, and other actors such as telecoms, in Peru and beyond.[71] As such, my chapter argues that rather than women testing mobile money, it is mobile money which tests the women to see if they work *for* financial inclusion.

The chapter is divided into two parts. It begins in Lima, where the test phase started with its designers (IT engineers, managers and international consultants all working from the capital city of Peru) testing the mobile money platform among themselves. I discuss the engineers' test 'environments' to open inquiry into the relationships among designers and women testers who also played the role of users and ask how the engineers get to know the users they are creating this system for.

The second part goes to a town called Andahuaylillas, surrounded with high mountains, in the South Andean region of the country, where the Modelo Perú project manager and consultants brought the platform to a group of local businesswomen to see if it worked for them. Developers chose these women because they fit into their categories of the poor, the rural, and the unbanked. There is nothing incidental in their choosing of women instead of men; in the self-representation of interventions like this one in Peru and elsewhere, as I already discussed, the 'included poor' –now a

[71] Kenya's M-Pesa was an initiative of a private mobile network operator (Safaricom), and it allowed millions of Kenyans living in rural and impoverished areas to switch to digital monetary transactions using their basic cellphones and without –at least initially–needing a bank account or otherwise forming any relationship with a bank. In other countries the digitization of money is primarily directed by central governments, like in India, where the national government led in 2016 a 'demonetization campaign' to "fight "black money"" or "cash made from tax evasion, crime, and corruption" and as a measure against counterfeiting. See: Tavneet Suri and William Jack, The long-run poverty and gender impacts of mobile money. Science 354 (6317), December 8, 2016 and Shashi Tharoor, India's Demonetization Disaster. Horizons: Journal of International Relations and Sustainable Development, No. 9, (AUTUMN 2017), 208

digital cash user incorporated in the formal circuits of finances– is almost always a woman of color. The one-day session with the women from Andahuaylillas was referred to by the experts who organized it and participated on it as both "a pilot" and "a training," and also as a "focus group slash training" and produced the picture that originates my inquiry and curiosity about the women testers. The section investigates the nature of the test and the role of its testing subjects (the women who as part of the test get portrayed in the pictures with their cellphones) and opens inquiry into development practices and its transformations in its encounter with finances.

I conclude the chapter suggesting that through these experimentations the women testers end up rendered as central infrastructural pieces in the mobile money architecture (in the form of representations) and serving the bankers' proposal, even if their cash never gets digitized.

The engineers' testing environments

As I was doing my fieldwork visiting regularly Modelo Perú headquarters in Lima, the capital city of Peru, I met Jeffrey, a BTCA consultant, who participated in the team designing and launching Modelo Perú mostly between 2014 and early 2016, and who took the picture of the woman with the cellphone staring at the camera. I asked him if he remembered taking it. Jeffrey, a Canadian in his thirties with a master's in International Relations, and who later went to work at the United Nations on developing digital payment services, told me that he remembered that moment and place well. It had "a very pretty church", he recalled.[72] He took the picture back in 2015, when Carolina, a development economist and the first general manager of Modelo Perú, invited him "to join her on the first public test" of Modelo Perú's mobile money system called Bim. Jeffrey told me that Carolina

[72] Jeffrey, email exchanges and Zoom conversation on April 2020.

chose the town, Andahuaylillas, because "it is relatively isolated and self-contained, there's a few shops, there's a few women that work in the market." Located at twenty-five miles from the city of Cusco and at ten thousand feet above sea level in one of the highest mountain ranges of the planet (the Andes), Andahuaylillas was the perfect "environment," according to him, to do Bim's "first public test."[73]

I asked him how this picture of the two women and children fit in this test which he also described as a "pilot." He told me that the woman with the apron and the cellphone in her hand, "was the first person out of our group of people, to do a live [mobile money] transaction in the market." That is, the woman with the mandil bought something at the small drugstore in Andahuaylillas behind her in the picture, and she paid for it using Bim in her basic cellphone instead of cash. Her transaction inaugurated Bim, the mobile money platform from the Peruvian bankers' collaboration called Modelo Perú, in the sense that she performed the first transaction on it outside of the team designing it (what Jeffrey called "our group of people").

To design and administer Bim, the banks participating in the Modelo Perú partnership created a company called Pagos Digitales Peruanos (Peruvian Digital Payments or PDP). The banks also hired the global IT company Ericsson to use their Wallet Platform technology to process the digital cash transactions at the core of Bim. Ericsson engineers working mostly from Sweden and India designed this technology and they deployed it in some African countries for telecom corporations, as they were the businesses that mostly drove mobile money there. As I learned during my fieldwork, Carolina and her engineers' team started working with Modelo Perú after the bankers had already chosen this technology. At PDP's headquarters in Lima, they had the challenge of adapting the Ericsson system designed for a single telecom's use to work for a partnership of banks.

[73] Unless otherwise noted, quotes come from a conversation with Jeffrey over Zoom in April 2020.

They extensively tested the mobile money platform –a kind of testing that is not yet public –, before the trip to Andahuaylillas that Jeffrey described and in which they performed the first (and only) 'public test' of it.[74] Prior to the public test, Bim's design and testing happened exclusively at PDP's headquarters in a succession of three *ambientes* (environments) called Dev (short for Development), Test, and Production.[75] It was (and still is) hard for me to imagine what these digital environments are and what happens inside of them even when seeing these ambientes on the engineers' screens, as I did back in the field. Margarita (PDP's former IT Operation Manager) used to explain to me what these were. Always patient and encouraging with my questions and guesses of how the platform works, she told me that the first ambiente, the one called Dev, is where the engineers write the system's code and test the "work units." Her answers often left me in the darkness of a virtuality I could hardly grasp and wondering about the immaterial materiality of software units. Luckily, she expanded her explanation: "speaking in the most basic way, a work unit is a little computer program written in some computer language that does something".[76]

Discussing the details of coding, Margarita specified that "you can develop a program that has twenty thousand lines of code and does everything, or you can develop *pequeños programitas* (small programs) that are called or used by a superior program." She used the example of Bim's mobile money wallet menu of transaction options that her IT engineering team designed at PDP's headquarters: "the menu says: Option one, send money, Option two, put money, Option three, top up cellphone." Therefore, she added "the menu is a program, it is a work unit that calls other work units." She supplemented her description with an example: "the program says if 'one', then call 'send

[74] Modelo Perú developers tested their platform Bim in Andahuaylillas and another town called Chincheros on the same trip to the Cusco region and in two consecutive days. Each pilot session was done with one small group of local women. Personal conversation with Carolina in June 2020.
[75] In the chapter "Building the pipes through changing tech environments" I discuss in depth these engineering practices.
[76] Unless otherwise noted, quotes come from a conversation with Margarita in August 2020.

money' and 'send money' is another unit of work that is built independently and performs the function of sending the money, and so on."

The engineers then copy these units of work to the second 'environment' called Test where, she explained, they do the comprehensive testing of the system. In Margarita's words, the combination of all these units of work created in the Dev environment and "structured by superior programs, as if it was a tree, make up the entire system." Test is still an enclosed environment, and PDP's IT engineers put all the work units together there to verify that Bim's system as a whole works as expected. For these engineers, 'working as expected' means according to their technical expectations, with every work unit doing its part for the whole. Finally, the system goes live, that is, into the 'Production environment' where it becomes accessible to all its registered users (like, for instance, the women in the picture).

My conversations with Jeffrey and Margarita suggest that the woman did her transaction (buying something in the small shop using Bim in her cellphone instead of cash) when the platform had already transitioned into the third environment (Production). It meant that all the *programitas* or units were working together as a whole and connected with the other channels and systems of each of the more than twenty bank partners of Modelo Perú. The platform was in the third environment (production) and thus, open –though not yet advertised– to everyone. This is why Jeffrey called it a "public test". The platform is open to the public but there is no public there yet, because no one, besides the engineers at PDP's Lima headquarters knows about it. So they go and test it with a potential audience: what they called 'rural women' along with a couple of small shops participating in this public test in Andahuaylillas.

The transaction that the woman with an apron made in this small shop in October 2015 inaugurated Modelo Perú's instantiation as a mobile money platform (Bim). For Jeffrey, "it was intentional that we chose a female, rural, ah hmmm", he lingered looking for the word, "indigenous

person who is also a merchant." As he recalled, it was crucial that "she has also a business that she operates" because "it shows that's who this platform is for." The woman in the picture thus checks off all the categories of Modelo Perú's imagined public (and that of BTCA's that Jeffrey represents): she is a woman, rural, indigenous, who is also a merchant, as her apron signals. She and the other women selected for the test may not be actually poor for local standards, but to him and his colleagues, they are 'poor enough' to qualify to be included in their pilot. They are useful to the experts and designers' problem of the slowness of cash that needs acceleration through digitization because they fit into the international development category of 'the working poor'—a conceivable subject for credit and the target of financial inclusion strategies–, as opposed to 'the poorest' –those who need support meeting basic needs–.[77]

Jeffrey also explained that Carolina, PDP's general manager, chose this woman in particular for the pilot because she knew her from a previous development project –the State's conditional cash transfer program called *Juntos* (Together) designed for people living in poverty– back when Carolina was the Minister of Inclusion in the country. I asked them both if they remembered the woman's name and they couldn't remember it. One could think that the woman in the picture has more of a collaborator status, as she was specifically chosen for the test, and as her transaction inaugurated the pipelines of the bankers' mobile money platform Bim, when digital cash traveled from her cellphone to the cellphone of the shop's owner. However, Bim's official launch would take place four months later, in February 2016 and in Lima, the capital city of Peru, located in the Pacific coast and more than seven hundred miles away from Andahuaylillas, its pretty colonial church and its surrounding Andean mountains. It took place in a high-end hotel, at a cocktail party for people wearing summer tailored dresses and suits, with the different bankers involved and their government representatives'

[77] Personal conversation on the distinction about the categories 'working poor' and 'the poorest' with a co-founder of the Consultative Group to Assist the Poor (CGAP) on September 17th, 2019.

guests and followed by a press conference.[78] No 'indigenous,' 'rural,' and 'entrepreneurial' women were invited; they were present in the pictures.

Knowing your user through use cases or 'la casuistica'

If the platform is for the working poor of Peru, from which the rural merchant women of the Andes like the ones in the picture are a subgroup, how do Margarita and her team of IT engineers working for Modelo Perú get to know what they need? I understand that in other software enterprises software designers use a different phased approach to testing and deployment: DTAP which stands for Development, Testing, Acceptance and Production. Instead of PDP's three environments (DEV, TEST, Production), this approach has four: *Acceptance* is the environment in which the intended users test the software product to verify whether it meets *their expectations*. According to this other approach, the deployment to a production environment -which makes it available to all users of the system-, happens if the product meets the technical expectations of its designers (which Bim did) as well as the usability expectations of its intended users *before* it is launched.[79]

When I asked Margarita about this user acceptance step/environment, she told me they did not do that. Instead, they did what Jeffrey described as 'public tests' with their expected users once the system was already in Production. This is not surprising though, DTAP is kind of the ideal process, and most frequently, engineers do the short version or DTP, like PDP's IT engineers did. In fact, IT engineers' culture often deletes the social by subordinating it to the technical (Star 1999;

[78] The official launch happened at the Swiss Hotel, San Isidro, Lima, on February 16, 2016, personal conversation with Rosa La Rosa, August 2020.

[79] For a future version, I could explore the deployment to a production environment thus makes the users available to the platform too; the relation is an interface, and it is always present; this interface makes the users (See Strathern and also Riles and the network inside out).

Forsythe 2001). This is not to say that PDP's engineers don't think about the users; but from their perspective, the users are a function of the system's usage; they are considered in relation to *use cases* –what Margarita often called *la casuistica.*[80]

For them, a technological solution that works is one that correctly performs in any use cases that they can imagine (*la casuistica*) so they meticulously checked the mobile money platform through their different enclosed testing environments in PDP's headquarters. In other words, it seemed that PDP's engineers never questioned the usefulness of the system for its intended users, whom other experts such as Carolina and Jeffrey conceptualized as '(working) poor', 'informal', 'excluded' and which then, in practice and in Andahuaylillas, they actualized and embodied into women who they also conceptualized as 'rural,' and 'indigenous'.

Instead, their work was grounded on the assumption that the system was *necessarily useful*, which is not an uncommon attitude among engineers (See Forsythe 2001). They assumed that if the system worked for them, then it worked for all. Taking the platform's utility for granted, they tested its functionalities extensively among themselves: a mixed group of professionals who live in Lima; they are mostly men and some of them are international consultants like Jeffrey; they all have smartphones and bank accounts. They are then, if we think with the binary pole of their own design categories, 'urban', 'not poor', 'formal' and 'included' and they brought to the design table their own beliefs and predispositions. These are inadvertently built into the system they are creating through what they can only see as technical decisions (Bowker and Star 1999). Bim's system which is already an adaptation of a technological solution (Ericsson Wallet Platform) created for another audience (single telecoms and not partnerships of banks) worked for them, and for the imagined poor user they abstracted from themselves. Thus, they assumed it would work for the women in the picture. When I

[80] For next version: Strathern, Audit Cultures

write it this way, it may seem that engineers intentionally bracketed off or deleted some kinds of users, but after spending time with them, it does not seem to me that engineers even think about it, or this way.[81]

In my conversations with PDP's engineers, it was clear that their goal was to deliver a system that achieves good technical performance (no error messages, no system crashes). Instead of getting to know the user and its contexts of usage, Margarita's team had a technology-centered approach, their efforts were put into trying to imagine and anticipate as many 'real' usage scenarios as possible and to test them in their three test environments, and correct when an error message appeared, or when the system crashed. Still, this is the imagination of the usage from people that doesn't share many characteristics with the intended users, thus there is some encoding of the team's biases in the technology –which then moves into the production environment prepared for some kinds of usages and not others.

This is a situation familiar to STS scholars of digital technologies, who have documented how engineers infuse, often unintentionally, their own social and political biases into the digital systems they develop. As a result, these systems carry and enact ways of classifying people and situations that perpetuate the inequalities they intend to address. For example, Virginia Eubanks (2017) has seen this unfold in her examination of the automation of welfare payments, homeless services, and child protection services in the United States, and how systems that were clearly not designed to act in a harmful way (or were designed for a particular country and then deployed somewhere else) end up profiling and punishing those who they are supposed to help. Safiya Noble (2018) has also shown how Google, a commercialized search engine that most people use as if it were a public service, organized and ranked search results showing strong prejudices against black

[81] For a future version of my work: Design literature for "they do not think this way"as I am looking at a design as it is also being empirically made.

people even though its engineers did not design its algorithms to do so intentionally. In other words, systems that are designed within a violent or unequal society will reinforce or even amplify those inequalities unless, perhaps they are designed explicitly not to.[82]

In Bim's case, the usage imagination that tests the system in PDP headquarters before bringing it to the women of Andahuaylillas comes from people who do not share many characteristics with the intended users, and both the system and the testing process carry its biases. PDP's engineers know that once a system goes live (and into the Production environment) unexpected things happen though, because any kind of user will bring new use cases that they could not anticipate. That is why, Margarita explained, engineers continue to monitor and adjust the system when it is already up and running, through the Dev, Test and Production linear sequence of practices-environments, and they replaced it frequently with updated versions of it. This makes this software malleable and easy to adapt. However, the mobile money software is also confined into a specific materiality, the basic non-smart cellphone, which later had the unintended effect of being too difficult to use for its users. This device was chosen precisely because of the set of assumptions about the rural, poor user that Modelo Perú engineers, consultants and bankers worked with. These are in part inherited assumptions, as they have been modeled by what worked in other places, mostly African countries, with different geopolitical, legal, and technical environments (for instance, with different internet penetration rates, availability of 4G networks, smartphones, etc.). Moreover, they have been in part designed using what worked in *other times* and not only spaces: for instance, the Kenyan M-Pesa chose a basic cellphone and the SMS telecom channel for mobile money back in

[82] See also Amy Moran-Thomas discussion of unintentional medical racism and the encoding of racial bias in a medical device that is been very popular in Covid times, the Pulse Oximeter. In: How a Popular Medical Device Encodes Racial Bias on: http://bostonreview.net/science-nature-race/amy-moran-thomas-how-popular-medical-device-encodes-racial-bias. See also *Racial Bias in Pulse Oximetry Measurement* https://www.nejm.org/doi/full/10.1056/NEJMc2029240

2007 when that kind of phone was still the dominant device globally, and the first iPhone had just reached the markets (and it was too expensive for most). These assumptions not only get translated into ideas about the Peruvian unbanked and 'rural' women but also, they have materialized themselves as the specific technological objects that the bankers chose for Modelo Perú in 2014: Ericsson's solution and a basic cellphone.

Relations of representation attempting to ground categories into actual people

Was it because Modelo Perú and Bim were not only a fintech project but a financial *inclusion* project that Bim's bankers and the engineers working for them decided to bet on basic cellphones? What I gathered from fieldwork is that they deferred the task of *knowing the user* to people with other expertise than their own, experts familiar with social development such as Carolina (and Jeffrey to some extent). They enabled Carolina to speak to them on behalf of the women in the picture because of her position of authority as the former Minister of Inclusion, her professional background as an economist specialized in microeconomics and rural development, and because she is a woman. Carolina provided them with a shortcut in their design process; she is the technocrat that replaces the women in the picture in the design of the working pipelines of Bim by explaining to the engineers the women's needs and expected use cases.

This resonates with what Diana Forsythe, anthropologist of artificial intelligence, commented on the case of system design for medical informatics. Instead of observing real-life problem-solving in the place they intended to field a system, the IT specialists she studied proceeded "on the basis of what designers and/or experts "know" about such sites in general, that is, on the basis of their conscious models of particular types of work as carried out in particular settings" (Forsythe 2001, 6). For them, problem formulation and design relied "heavily on intuition and introspection on the part

of the system designer[s]" (Ibid). She even mentions that sometimes the design teams she followed ethnographically worked with one subject, just one doctor, "whose perspective is taken as representative of an entire field" (Ibid).

The relation of representation in Modelo Perú's case is different, however. Instead of one doctor as representative of all doctors that could use the AI system that Forsythe talked about, here I found one economist (Carolina) that is taken as representative of the 'rural' 'indigenous' women and the 'working poor' of Peru. Carolina used to advocate for these constituencies within the state apparatus (as a Minister), and now she speaks in their name about their needs (and use cases) to bankers and engineers. In other words, she is the interface between designers, bankers and women in aprons. Carolina is also the interface of Modelo Perú with the state (and her former colleagues), and the world of global development. She is often a guest speaker at international conferences and that further validates her position with bankers and engineers. Jeffrey, the BTCA consultant, also attends these conferences, in fact he helps translate Modelo Perú to English which makes it travel farther–.

In the last decade, these conferences gathered international development officials, policy makers, regulators, representatives from telecom and banking industries (like the bankers of Modelo Perú) interested in microfinance, financial inclusion, and mobile money. In these spaces two things featured prominently. The first one was women of color as the subject of microfinance practices. Microfinance consists of giving small loans to groups of poor borrowers who paid them with interest and in cash in weekly intervals directly to a debt collector; these microloans allegedly enable their economic empowerment by helping them start or sustain their business (Kar 2018, 2). Secondly, these spaces showcased African mobile money, particularly the Kenyan M-Pesa which started in 2007 and by 2014 had still most of its users transacting through basic cellphones and was widely successful with poor and rich people alike (Omwansa and Sullivan 2012; Rea and Nelms 2017, 5). At the time, M-Pesa was the case study that everyone in these spaces talked about, and it was taken as

proof that the basic cellphone was the technological enabler needed for scaling up microfinance into a wider scope of financial inclusion services such as digital payments and savings.[83] In these spaces experts shared case studies and statistics that supported the understanding that rural 'poor' women were both the most excluded of the excluded and more entrepreneurial and reliable paying debts than men and, consequently, a necessary target of financial inclusion practices through cellphones (see Schuster 2014; also Roy 2012).

Bankers and experts like Carolina who bridge the worlds of international development and finances brought back to Modelo Perú the authoritative knowledge that feature phones and rural women were key to the engineers' task of designing Bim. The engineers tested the mobile money platform generalizing use cases for a user that they clearly conceived as different from them, not only demographically but technologically, and to whom they attached a corresponding device (a basic cellphone- which was already at that time, 2014, a receding technology). This is the system they were going to later test with the actual chosen women of the town of Andahuaylillas. And yet, when I was in the field shadowing the engineers, it seemed clear to me that the public test with the women in the picture did not test user acceptance. What does a public test *test*, then?

A test that is a training and a focus group and a pilot

It turns out that it was more than a test, it was a training session.[84] In the session, the women were trained to perform transactions with Bim in their basic cellphones. Jeffrey explained it to me in this way: it was a "one-day learning session" in which "we explained [to the women] how Bim

[83] I discussed this in depth in Chapter 1.

[84] Jeffrey shared with me a zipped folder of more than a hundred pictures of that day. The images show different moments of this training session, and another performed the next day in a similar town in the same Andean region with a second group of women. He gave his permission to use the images in my writing.

worked, we explained the logic, we explained how the cellphone keys worked, we walked them through all the transactions."[85] Figure 2.3 shows the woman with the *mandil*—the microentrepreneur, who will later be photographed outside the store with her cellphone waiting in line, but in this picture, she stands next to a woman facilitator. Both have their backs turned to the camera. The woman with the mandil is practicing using the mobile wallet menu. Before doing it on the real phone, she is guided to do it with the help of a giant basic cellphone poster hung up in front of a whiteboard. With her index, she touches the donut-size number keys practicing the menu that Margarita, the IT engineer explained to me: *Option one, send money, Option two, put money, Option three, top up cell phone*. In the picture we can also see a cameraman documenting the training, and the other woman of the opening picture too, this time with her child sleeping inside her multicolored *lliklla* blanket.



Figure 2.3. The woman with the merchant apron practices using Bim's menu with a facilitator next to her and with an image of a giant basic cellphone. We also see the cameraman recording the session. Credits: Jeffrey Bower.



Figure 2.4. A behind the scenes picture shows the other women trained in the public test and the same facilitator explaining Bim's use to the woman with the merchant apron but this time with her real cellphone and before getting into the shop to perform a purchase with it. Andahuaylillas district, Quispicanchi province, Cusco, October 2015. Credits: Jeffrey Bower

[85] Jeffrey, Zoom conversation, April 2020.

Another member of PDP, told me that as far as she could remember, after practicing with the giant cellphone poster, the facilitators helped the *señoras* (ladies) in creating their Bim mobile wallet accounts. Then the facilitators sent fifty soles (fifteen dollars) to one of the *señoras'* Bim wallets and she would have to distribute that money among the group. All the *señoras* would practice sending money to each other, still in the classroom, and at the end of the training each would stay with five soles (1 dollar and fifty cents) in their Bim account. After this training in Bim's use, the women proceeded to try the system with a real transaction in the small shop shown in the first picture and in figure 2.4, with the five soles (about one dollar and a half), courtesy of Modelo Perú, they had in their Bim mobile money accounts in their cellphones.[86] As Jeffrey explained: "we walked them to a store where we said, 'ok now what do you want to buy?' and they went through, and a bunch of them performed a transaction [with Bim]."[87]

The transactions of the woman in the picture and the other ones who participated in this training inaugurated a period of testing the mobile money platform 'in the wild,' that is, in real conditions: with the kind of users that its designers expected for this platform and, at least locally and for the purposes of this test, with one of the banks partnering in this initiative connecting its banking interfaces and sharing information with the mobile money platform—as was Modelo Perú's promise –.[88] This phase corresponded to the engineers' 'Production environment' but the platform still lied somewhere between being live and *fully* public. It was not fully public because there were no users yet. In that sense, it was an 'empty' platform, without money circulating through it yet; a project with

[86] The purchasing value of five soles in a small shop back in 2015 could amount to a small, bottled water, and a couple of small bags of industrialized snacks, and some fruit, or it could be used to top up a phone with airtime credit.
[87] Jeffrey, Zoom conversation, April 2020.
[88] I discuss the banks' collaboration in the process of designing and building Bim's platform followed by their lack of collaboration (as in sharing their actual infrastructure) once the platform becomes an actual service in chapter 4.

its digital pipelines ready to receive and transport digital cash and still in the process of leaving the IT enclosed environments of Dev and Test to become, using Jeffrey's words, "a service in the market." That was the moment in which the women's picture was taken.

A training session designing the recognizable 'poor' that the technology needs

To arrange a one-day training session for the local women of a town distant from Modelo Perú's headquarters, it was necessary to hire a company to ensure everything was in place and ready for Carolina and Jeffrey when they traveled to witness its deployment. Jeffrey told me that they hired "a company that ran focus groups," and that the training was operated "as if it were a focus group slash learning session". The company, he mentions, "set up all of this for Carolina and all of us beforehand", they had the women's consent to participate in the pilot's activities, and all the logistics of the learning sessions ready. This also included, on one hand, training two small-shop owners where the women practiced making purchases with their cellphones. On the other hand, it involved training a cashier from a savings bank called Caja de los Andes in cash in/out operations and other transactions on Bim's platform. The facilitators took the women to the bank after completing their transactions in the small shops to familiarize them with banking procedures and practice withdrawing the remaining money (equivalent to a dollar and a half) from their phones. This savings bank, a partner of Modelo Perú, does not have branches in the towns where the training sessions were performed, so the facilitators had to take the women on a bus to a different city to complete that operation, and then bring them back to their hometowns.

The company that ran focus groups had all set up beforehand because that day, as Jeffrey narrates, "we were doing a formal press release, we had the press there, we had a photographer

because the intention was for this to be documentary evidence of a pilot being successful."[89] The outcome of the pilot was thus also defined *beforehand*: it had to be successful because the goal was to have the formal press release proving that the platform worked for the women in the picture. A formal press release (and connected pictures) that bankers, technocrats, and the international development community would then read in other places, far away from the town of Andahuaylillas, its pretty colonial church, sunny afternoons, and merchant women. Carolina and Jeffrey were convinced of the goodness of mobile money as a tool for financial inclusion and for the digitization of cash beforehand as well, and in the macro-terms of policy making in which it was discussed with other publics (development agencies, fintech philanthropy, state officials) in spaces such as international conferences, the hallways of the World Bank's regional headquarters, annual meetings of development and financial alliances, and national ministries' bureaus.

I recall being a little bit confused at this point in my conversation with Jeffrey though. Can a one-day training and one transaction per señora –guided closely by a facilitator (see Figure 2.3 and 2.4)- be the documentary evidence of a successful pilot and of the acceptance of a technology? Rather than succeeding in testing its use and in training the señoras, it seems more likely to say that Modelo Perú partners succeeded in recording this moment in images. One could say that the point of the test isn't to test the technology, or even to make the test, but to *make* the picture. In other words, it looks like they are visually documenting a process, but the 'documentation,' I argue, is itself a necessary infrastructural piece of Modelo Perú.

What I am suggesting here is that more than just a mobile money platform, Modelo Perú is a variable set of design practices that cater to different audiences. It doesn't necessarily require being fully operational as a mobile money platform with users to do some types of work for some of these

[89] Jeffrey, Zoom conversation, April 2020.

audiences. In STS parlance, Modelo Perú/Bim are "boundary objects" with enough definition that can be recognized as one thing but fluid enough that they participate in multiple social worlds, facilitating communication between them and having a different identity in each social world they inhabit (Star & Griesemer 1989). As its name states it, Modelo Perú is *modeling* futures for money through its practices, and these practices yield different material things at different points in time, which in turn can be considered models or 'working objects' performing certain work for specific groups of people (Haraway 2016).

For instance, there was a time before what I am describing here, in which Modelo Peru was just a proposal, modeled in the bankers' representatives' offices borrowing from mobile money models and digitization processes from elsewhere. The proposal had three components: the collaboration among competitors (more than twenty financial institutions, including the country's largest banks), the interoperability of its infrastructures (ATMs, local banking agents) which assumed that the banks' partners would share, and the inclusion goal of providing financial services to the poor (coordinated with the state). Its proponents toured international global development and IT conferences testing their model which at that point was precisely just an idea put on paper, some initial PowerPoint presentations, charts, and tables presented to people. Those were the 'working objects' discussed among some constituencies which facilitated in turn the next materialization of *the Peru Model*—a nickname that these experts (bankers, engineers, development practitioners) earned for their project precisely by going together to these spaces (performing the collaboration their model proposed) and which they later officialized as the name of their initiative (Modelo Perú).

At the moment I am narrating in this chapter, Modelo Perú is being implemented as a mobile money infrastructure named Bim via a third party (PDP) and its IT engineering environments. However, Bim is not yet operational and there is a significant amount of simultaneous work going on. While the IT engineers at PDP's headquarters are devoted to making the digital pipes of Bim, -

another material instantiation of Modelo Peru which is not fully ready or public yet-, the marketing team and international consultants are engaged in producing this other instance: a marketing package that fleshes out the former proposal, and in which the picture of the women with an apron doing a transaction is necessary to prove that the system (Bim) works for this audience and therefore it could be a tool for financial inclusion.

Thus, at this point, the main product is not yet a working system or a system that anyone uses –even though its pipes are ready-. The main product is a marketing package made for other audiences or publics than the women in the picture, and its materiality *still consists* of PowerPoint presentations such as the one offered at the beginning of this chapter (Figure 2.1), institutional websites, news reports, and design specifications and functionalities written on initial versions of a *manual operativo* (operating manual). This package has its own value, or is its own currency, with at least three publics: the international development community and its webinars and conferences, the state, and the banks that own this project (as well as the financial networks of other banks in which they participate).

Modelo Peru added real rural towns and 'poor' businesswomen to its modeling practices in the 'public test' phase of its design process, but it seems that what it is really at stake here is the testing of these other audiences' support. This picture with the women and the cellphone is a tool of the design, of the process of figuring out each of Bim's features and of gaining support and credibility from these different publics. The training and resulting picture portray the identifiable 'poor' that the tech needs to continue its progression into a different stage of materialization.

STS scholar Bruno Latour elaborates on technological projects as cultural objects when discussing Aramis, the transportation system project for Paris which gained and lost materiality (from ideas to documents to prototypes and back to documents forgotten in some drawer) and ended never being deployed as such. Modelo Peru, at this point and like Aramis, is a fiction with "variable

geometry", a fiction that can gain or lose reality and the potential to become an object (a means of digital transactions in Perú) depends not only on the ingenuity of its engineers but on the support of these different constituencies (1996: 24-5). The whole test (and even perhaps the whole Modelo Perú project) could be seen as a demo for people with political and economic leverage (Rosental 2021, 2).

In other words, I suggest that all these stakeholders become audiences of this endeavor through this design process, and the features of Modelo Perú's design become the promises that PDP needs to demonstrate to them. PDP engineers and managers not only have the task to deploy Bim's infrastructural pipes for money but in parallel and crucially, they have the task of demonstrating to the national government, global development agencies, and even to the banks owning this partnership and its resulting technology, that Bim fulfills the promises of Modelo Perú.

Bim, the mobile money platform may very well be designed for the 'poor' businesswomen of rural Peruvian towns, and to fully exist as a platform it will need users (this audience or else) to turn their cash into e-money and transact with Bim. However, the relation between this specific audience and the platform is not a given, it may or may not happen, it is an assumption of the design process (and of the first picture). Jeffrey did not take this picture to be consumed by this audience (say, as an advertising tool to convince other rural businesswomen to use Bim). Rather, these women are in the picture *to work for* Modelo Perú (and for the larger financial development project in which Modelo Perú participates).

Let me spell this out. The women testers are in the picture because they participated in a pilot; they are not Bim clients yet. But in the picture, the women are credible as if they were already clients of the platform and not just trained subjects for a usage test. The picture has a 'use story,' it tells us that these women are using the platform to make digital payments. Modelo Perú's partners and other institutions such as the Better than Cash Alliance used it to make presentations that

showcased the potential of this technology to other audiences. One of the audiences of that compelling story is the Peruvian government that was at that time giving a strong push to financial inclusion; another is the international community of global development, banking and telecom industries alike interested in these topics.

Bankers, Carolina and Jeffrey have used the pictures of the rural women testers performing a transaction for the camera in their own performances to different audiences (presentations, webinars, and national and international news articles about Modelo Perú).[90] This image (and others taken during the same test-training-pilot day) portrays a promised and imagined future that even if not explicitly presented as an accomplished past, through its continuous usage (copy pasting it from one to another presentation and from a moment to another) it ends up being read as such. In its repetition and circulation among many other pictures with similar stories and their lingering around online, these images end up standing for reality, as achieved realities, especially for the farther removed audiences. These images still populate the Internet, and they illustrate to this day (beginning of 2024) PDP's website conveying, for the untrained eye, an unwavering support to financial inclusion. They solidify a representation of reality in which women are using the platform with their basic cellphones, while the actual mobile money platform transitioned to an internet-based App—accessible only through smartphones— since early 2018.[91]

But besides national or international audiences, the bank partners themselves are both some of Modelo Perú's stakeholders and one of its publics since they are not directly involved in it but through a company (PDP) they created for it, a third party which develops and manages the mobile money platform Bim with their financial and infrastructural support. Thus, the banks' support is not a

[90] See https://www.theguardian.com/global-development/2015/oct/09/peru-mobile-money-bim-banking-financial-inclusion. and https://www.betterthancash.org/news/modelo-peru-webinar

[91] The images portray basic cellphones that cannot access Bim since 2018 when the mobile money platform transitioned to an internet-based App accessible only through smartphones, see https://pagosdigitalesperuanos.pe/ (last accessed: 12-11-2023)

given either; it is another design assumption which needs to be constantly negotiated. PDP's engineers and managers must demonstrate to the bankers (with monthly numbers, statistics of progress and individual compelling stories) that this initiative is worth their investment in the long-term and convince them to chip in more resources every now and then. In the field, engineers often mentioned that when Modelo Perú was a project being prototyped and tested, bankers were very enthusiastic about it, and that is the moment described in this chapter. Later on, when their project became a product though, that is, an actual mobile money platform (Bim) which they collectively owned, they were reluctant to continue supporting it even though it was their own and, according to the engineers working on it, Bim "only needed pennies from them to function in comparison to the banks' other investments."[92]

Thinking with STS scholar of digital technology Morgan Ames, Modelo Perú seemed to work better for its investors when it was only a 'working object' or model performing aspirational futures that could not be compared with the actuality of the mobile money platform's labor-intense incremental achievements (2019, 178-9). Ames studies the One Laptop Per Child development project (or OLPC), a Silicon Valley approach to development in which cheap simple laptops given to kids in low-income countries is considered the technosolution that will improve education and progress there, to conceptualize the charisma of a technology and its promises. For her, "a charismatic technology derives its power experientially and symbolically through the possibility or promise of action: what is important is not what the object is but how it invokes the imagination through what it promises to do" (10). In that sense, more than the material form of the charismatic technology what matters is its ideological commitments or "charismatic promises" which in turn work in a "sociotechnical web of other actors and social imaginaries" (Ibid.).

[92] Personal conversations with PDP engineers during fieldwork in Lima, 2019. I examine this moment of the project (Modelo Perú as Bim) and banks' disengaged attitudes towards it along with PDP engineers and Bim advisors strategies to make it thrive in chapters 3 and 4.

In this example, I speculate, the cheap kid-friendly laptop is not as charismatic if presented without the imagined user for it (the 'poor' kid from an 'underdeveloped' region), and its charisma remains for as long as there is successful news pouring from 'the field' that empirically ground its promises. The problem is, as she examined in her research, that these expectations do not match the unattractive reality of projects, its challenges and slow achievements, downfalls and adjustments and the amount of *acompañamiento* (chaperoning) by facilitators that these technosolutions need in order to give an appearance of fulfillment of its promises. Often proponents prefer to perform an alternate reality instead, one that matches what stakeholders and the tech world wants to hear of social change and futures that seem easy to achieve or even inevitable through tech interventions (172). This approach, in turn, keeps the charismatic promises alive, independently of the specific technology of the moment, which may be soon replaced by another, once the charisma of its proposal fades away, confronted with the project's reality, and consequently loses traction and support.[93]

Modelo Perú's proposal generated expectations because of its collaborative banking approach—cost-saving for each bank participating in it and internationally unheard of for the case of mobile money at that time. Instead of each bank creating exclusive mobile money wallets accessible only to their existing clients within their own infrastructure, Modelo Perú envisioned leveraging shared resources such as ATMs, agents, and branches. This collaborative strategy sought to expand their reach to those who were not yet clients of any bank (the 'unbanked'). To borrow from anthropologist of international development Sohini Kar, the banks' expectation is that mobile money will enfold "the formerly excluded into globalized financial networks" (2018, 9). Once these users

[93] Also, the issue with charisma is "when a technology's promises outstrip its actual capabilities and capture the social imagination" that is, when its designers and advocates get caught up in these narratives, what happens is that these narratives "continue to reappear in new projects" (Ames 2919, 13). The OLPC and also Modelo Perú and Bim have already lost most of its initial charisma, but certain ideas that animated these projects still are charismatic, and by development being a 'project system', then they appear again somewhere else, and are experimented in a new way.

were integrated into the banking system, competition among the banks could then ensue to win them over as clients. In the bankers' jargon shared by PDP experts, this project required "patient investors." They needed to wait and see Bim's promise to them unfold: the assumption was that through their use of Bim, the 'unbanked' would perceive the value of having a bank account. Then, the banks could start offering microloans or microinsurance and not only payments and remittances services directly to the cellphones of these new clients, and that would, in turn, expand the financial market and eventually generate revenue for each of these financial units. This concept generated international enthusiasm, or its initial charm.

My point is that design practices work by interconnecting all these stakeholders' expectations: that of banks (to financialize the poor's money) along with the government's expectation of financial inclusion which is in turn modeled in conversation with global development and its vocabularies, knowledge-making practices and connected financial allocations. The interrelation between these three publics is what gets designed through the design practices designing a mobile money platform for financial inclusion. Modelo Perú as a set of modeling practices also designs the relation between banks, development agencies and the state that Modelo Perú proposes. In the making of their respective commitments and expectations into a shared promise which in turn will be translated into a persistent object (a mobile money platform), Modelo Perú also interrelates these publics and designs all these relations (see Irani 2019, 119).

The women of the pilot match an already installed imagination of the 'rural microbusiness women' as a subgroup within the big pie of the 'unbanked', or better, it is the charismatic chosen face of it for these design practices. The women are needed as the empirical grounds to create the image of the women which in turn crystalizes the design and gives traction to its initial abstract and

financial charm. The image, not the women, is the boundary object needed to gather these publics and push forward the imagination of a fully digitized future for money.[94]

The señoras from the picture did not seem to have a need for the mobile money platform (or for a formal relationship with banks) prior to this pilot encounter. Rather than stakeholders, or users included in imagining the platform in any way, these women *were trained*, in one day, to use it –and it remains unclear if they ever used it again. The platform was designed with them (and other people like them from other places) in mind, which is different than with them participating in the design process. A top-down design, modeled "grabbing stuff from Africa and other places", as Carolina mentioned once to me referring mostly to Kenya's mobile money M-Pesa, stuff that worked in other places and was shared in presentations, webinars and conferences of the international community of people imagining financial inclusion.[95]

It is a model that had defined a subject for itself *beforehand*, the female microentrepreneur, and not because it was inspired in the practices of specifically Peruvian rural and indigenous merchant women but because this was the inherited subject from microcredit and microfinance initiatives (See Roy 2010, Kar 2018). What these pictures tell us is that now women can use their cellphones for digital payments and, by extension, it also tells us that the women have become not only subject to extraction via microloans but also via financial inclusion endeavors.

Perhaps this explains the absent presence of the woman with the merchant apron from the initial picture of this chapter (and all the rest after her) in the practices described in these pages, and why we cannot know her name: she is the new representation of an *inherited subject*, that the design of Modelo Perú needed, not a person.[96] She and others like her are the image that guides the

[94] For the future: Potemkin Village and Diegetic prototypes
[95] Carolina, personal conversation, January 2017.
[96] I thank Marie McDonald for her comment on this.

progressive actions of Carolina and Jeffrey and, paraphrasing Morgan Ames (2019), bring about the charisma of Modelo Perú. The engineers work with what they tell them about the user. A quite *macro*, top-down envisioning of what *micro* is; these experts seem to be trying to assemble or make the *micro* via *macro visions* of it that efface the real persons.[97] When I asked Jeffrey if they also did pilots with men, he said that they only did them with women guided by their belief that they were "who could most benefit from these services". It is a macro-idea, a mix of top-down visions of digital finance in rural communities from the worlds of finance and the international community of development organizations expected to work in the microcosm of Andahuaylillas

And still all this charisma is conceived for the gaze of experts, makers of technologies, development brokers and intermediaries and Global North consumers of its promises. In my research, the basic cellphone as a transactional device needs the woman in the picture to bring about its charisma for these audiences, and I wonder if there is any charisma on the technology for the woman. If the women in the picture and in the public test are not the audience of this technology, what are they doing here? Is there any charismatic promise of this technology meant for them? What is being evaluated through them?

A focus group and subjects testing poverty

In what follows, I delve deeper into the nature of these women testers—who do not appear to be testing user acceptance—, treating them as integral components of the mobile money design process. While the previous section examined their presence in a test whose proponents described as

[97] I thank Kristi Onzik for her comments on this.

a ‘learning session’ (for the women to train in the use of the tech), this time I pay attention to the test as a ‘focus group’ which was another way in which Jeffrey and others alternatively talked about it.

There is a kind of focus group as a market research method to gather qualitative information in which a demographically diverse group of people (usually between six to ten participants) reacts and provides opinions about a new product, service, campaign, or concept before it is deployed to a larger population. That kind of focus group usually lasts around thirty to ninety minutes and takes mostly the form of a discussion led by a market researcher. It doesn’t seem to be the case here, Jeffrey never mentioned the women in the picture’s opinions about Bim.[98] The facilitators, Jeffrey and Carolina didn’t return to Lima and to PDP’s headquarters to tell the engineers what to adjust in the platform with the women’s feedback. Their opinion is never solicited as far as I can tell; in the classroom they were trained to use Bim (with the big image of the non-smart cellphone in the white board, and in groups with real cellphones) and then they went to the store and the bank to perform what they have learned. In conversations with both Carolina and Jeffrey, I got the feeling that considering the women’s opinions about their needs was almost deemed unnecessary. The technology/product seemed to mandate what was needed, presumably guided by expert assumptions of knowing more and better than the women about their needs. The latter at least in the sense that these professionals felt that they were in closer contact with a dominant imagination of a financial future in which a cashless society awaits everyone, and they were invested in understanding if the women could be prepared for that.

There is another kind of focus group in which instead of people trying something new and giving their opinions, experts put people through some test that they design; the focus group here is done to see if their test worked. An example is clinical trials, more formally known as randomized

[98] PDP did a functional product test (the marketing kind of focus group) with a company called Copiloto to test stuff such as the wording used in the mobile wallet menu, before this public test was done and in Lima, not with rural women of color.

controlled trials (RCTs). On them, for instance, people are needed to test the acceptable dosage ranges for a new drug, or to prove the efficacy of a vaccine (see Sunder Rajan 2017; Petryna 2009 and Maurer 2010). For this type of test, experts need people, but they are not that active—for lack of a better word. There is something being tested on them, they are experimental or testing subjects, but their opinions about the clinical trial are never asked. The women who participated in this focus group are perhaps analogous to subjects in those types of trials which have been borrowed and repurposed by Development Economics.

Development Economics, its professionalized knowledge, institutionalized practices, tools and vocabularies have shaped the ways in which development agencies and practitioners understand and intervene in poverty. This discipline is, according to anthropologist of development Arturo Escobar, "the single most influential force shaping the development field" (2011, 17). For Escobar, poverty on a global scale was "a discovery of the post-World War II" (22). His statement should not be taken in an objectifying sense (as a reality out-there independent of the practices and discourses that shape it) but rather it means that poverty turned into an "organizing concept and the object of a new problematization" (24), measured and managed in economic terms. As he states, "the perception of poverty on a global scale 'was nothing more than the result of a comparative statistical operation, the first of which was carried out only in 1940'" (Sachs 1990:9 quoted on Escobar 2011, 23). The metrics for this calculation was the comparison of the annual per capita income per country in connection with another metric: Gross Domestic Product or GDP. As Escobar adds, "Almost by fiat, two-thirds of the world's peoples were transformed into poor subjects in 1948 when the World Bank defined as poor those countries with an annual per capita income below $100" (24), a completely arbitrary number used to measure as many differentiated socioeconomic arrangements as territories were included in these statistical comparisons. Still, for its proponents this comparison was useful to

propose their envisioned solution: “if the problem was one of insufficient income, the solution was clearly economic growth” (Ibid.).

For Escobar, development is the institutional field invented to address the problematization of poverty in these terms—a field in which “discourses are produced, recorded, stabilized, modified, and put into circulation. This field is intimately imbricated with processes of professionalization; together they constitute an apparatus that organizes the production of forms of knowledge and the deployment of forms of power, relating one to the other” (46). Development, paraphrasing Escobar, operates as a discourse because it creates a space in which only certain things could be said and even imagined; a space for the systematic creation of concepts, theories and practices—and its experts and authorized voices circulating at centers of power at all levels, international and local.

Without denying that the work of the institutions operating in the field of development may have benefitted people at times, the author’s emphasis is on pointing that “the work of development institutions has not been an innocent effort on behalf of the poor” (46). For Escobar, its greatest success has been creating a type of underdevelopment that for the most part is “politically and technically manageable,” and it keeps incorporating more objects of intervention and methods to control populations in increasingly detailed and encompassing ways” (47). One example is the incorporation of clinical randomized controlled trials methods that I am exploring here.

Still thinking with Escobar, it is not that poverty wasn’t discussed and addressed before the 1940s by different institutions, the change he historicizes is one in terms of scale, conceptions and management of poverty. In the aftermath of World War II, war on fascism was steadily replaced by war on poverty, as the Third World emerged as a threat to developed countries if their poverty was left untreated. This is where we see this “medicalization of the political gaze” as “the popular classes began to be perceived not in racial terms (…) but as diseased, underfed, uneducated…” (30).

So, it is not surprising that in the last decade, Development Economics has borrowed and repurposed these clinical randomized controlled trials methods for what they call 'field experiments in poverty research.' The institutions that design these experiments and organize their deployment have taken the form of 'Poverty Labs'. These are believed to be such good (efficient) methods to intervene poverty that in 2019, the Economic Sciences' Nobel Prize winners were Esther Duflo and Abhijit Banerjee from the MIT Jameel- Poverty Action Lab (JPAL).[99] At that time, the Nobel Prize committee commented that "their experimental research methods now entirely dominate development economics," completely transforming the discipline and enhancing its ability to provide "reliable answers about the best ways to fight global poverty."[100] Carolina, at that time the appointed PDP General Manager, is a development economist herself, has an academic profile for local standards and experience staging economic experiments in collaboration with international scholars and institutions. Perhaps her intention was to borrow some RCT techniques for the test with the señoras from Andahuaylillas.

Clinical trials can become a type of experiment repurposed to study and *treat* poverty also because, as anthropologist of money Bill Maurer points out, there is a long-standing disease approach to the poor's use and store of their money among the development community and policy professionals. In the past, he argues, *pathology* was the approach; the poor were 'diagnosed' as "constitutionally incapable of saving" (2010, 12). When practitioners held the belief that the poor were either "too poor to save, and/or they lacked the foresight, discipline or financial literacy skills to enable them to save," there was no possible treatment to offer to them (ibid.). Once that belief was dispelled, and these expert communities recognized that the poor can and do save in different ways,

[99] See: https://news.mit.edu/2019/esther-duflo-abhijit-banerjee-win-2019-nobel-prize-economics-1014
[100] See: "Poverty Fighters" by Andreas Adriano, Finance and Development Magazine, IMF in https://www.imf.org/en/Publications/fandd/issues/2020/06/MIT-poverty-fighters-abhijit-banerjee-and-esther-duflo (published June 2020, last accessed 01/14/2024).

epidemiology replaced pathology: "practitioners became convinced that the poor, having already demonstrated a number of informal savings arrangements in their portfolio, simply needed assistance – treatment – in order to achieve their (and others') savings goals" (Ibid.). Development economists' new *diagnosis* is that the poor save money, but they need the *right* savings-loans *treatment* to do so, and experiments help figuring out that. In that sense, "the epidemiological discourse" is "not just an extended metaphor": "the methodologies of choice in assessing design and adoption of new saving services by major players" in the space of microfinance, mobile and digital payments mimic hard sciences practices in using RCTs "taken directly from clinical biomedical and epidemiological research" (12).

Anthropologists have been documenting for as long as the discipline exists that local communities everywhere have different saving practices and engage in various debt and credit relations other than market-controlled ones (besides classic work on this from Malinowski and Polanyi, see Guyer 2004; Graeber 2011 among others) or in banking practices that are not the conventional ones (Maurer 2005). Economists have often categorized these practices as 'informal,' a topic I discussed in the Introduction of my dissertation (also see Chapter 3). Attempts to incorporate these so-called informal economies into the formal ones can also be traced to early development interventions, for instance, as loans to farmers and cattle breeders. Thus, it is not that the money practices of the people who these experts categorize as poor have necessarily changed; rather, the transformation lies in other technological changes (such as the ubiquity of cellphones capable of functioning as transactional devices) and shifts within development practices (such as microfinance).

This epidemiological approach appears then to be more treatment-centered than 'patient' (or user or beneficiary) oriented: these transformations imply that at the time in which Modelo Perú is performing this focus group, there were already more efficient tools than in the past to grant access to 'the poor's money to 'formal' financial service providers such as banks. Poverty labs then test

different products including financial ones just like pharmaceutical drugs are tested in clinical trials. The reorganization of development practices into Labs bring them thus closer not only to clinical laboratories and epidemiological or population control practices but also to design practices (where the idea of innovation labs come from) and to marketing and finances practices. Just like new drugs and vaccines, these are the relatively new technologies available (mobile money and microfinance), and the critical question of experiments seem to be how to create, expand and enhance the profitability of a market for these technologies. Could it be then that the 'public test' with the rural entrepreneurial women is a kind of testing in which the treatment (mobile money) is corroborated? How do economists conduct poverty RCTs and particularly those oriented to financial inclusion?

To answer these questions, I spoke with Daniel, a Professor of Economics in a European University, who works often with the MIT Poverty Lab, and is also a good friend.[101] He explained to me that in field experiments in poverty research "the RCT method starts with designing a treatment to measure an effect." For example, a treatment could be "to give money to the people" and the effect measured would be if cash transfer programs (often used to alleviate poverty) work as the factor that "makes more people send their kids to school." He further detailed that the idea is to insert an external element (cash transfer) into "an environment that you recreate as a laboratory assigning, within a large sample of people, a treatment and a control group so that you can later say that the changes are specifically the effect of your treatment".[102] Towns are transformed into laboratories, even though the 'environment' in which the experiment is conducted cannot be as controlled as is the enclosed space of an actual biomedical laboratory or the computer-based testing environments of Modelo Perú engineers.

[101] Personal conversation with Daniel on October 10, 2020. He uses experimental and non-experimental methods to study questions in development, political and organizational economics.
[102] He added "as in medicine and its clinical trials, we also pre-register the experiments".

The more we talked, the more my friend sounded like a doctor. For instance, when I asked how long an experiment lasts, he replied, "the time depends on the treatment" and on “what you want to measure.” He added that some experiments can last years, even decades, others are short term ones, lasting a couple of months or a year. When I asked him how he defines a treatment I received again an *it depends* but this time followed with some examples. “It could be that there are some people that have a product they want to introduce somewhere, say a deworming drug or fortified rice, and the lab convinces them to form a partnership and run an experiment”. He added that the idea is to see how academics and practitioners can work together; "as an academic, I have a question; you, as a practitioner, want to see what works with this group of people, and I want to publish a paper." Another partnership example he gave was with a business, “it could be that a company wants to introduce financial products to new sets of consumers and see what the adoption barriers are, so you [the academic] propose a partnership to take these questions to the field with an experiment design”. Another avenue to define a treatment is the World Bank's agenda, “for example, its formalization programs give twenty-five million dollars to do experiments and academics propose different things.” In none of these avenues for defining treatment the ‘patients’ (the global south poor) seem to participate and provide evidence of their *ailments in need of treatment* let alone other opinions, preferences, suggestions about the (pre)selected treatment. At the same time, I am certain that representations of them participate in these processes as statistical aggregated data, or ideal customer profiles, and the likes.

A pilot or when development projects become ‘business tied to development’

The more I learned about field experiments in poverty through this conversation, the less I thought about the señoras from Cusco as experimental subjects analogous to those of global medicine

(Sunder Rajan 2006; 2007; Petryna 2005). I get the sense though that if that were the case, the actual test would have been different. This exploration, however, takes me to scrutinize in turn and in more depth the changing nature of development practices in their encounter with finances.

As Daniel and I tried to think together about where these women could fit in the RCT economists' schemes, I found out that pilots precede RCTs –and PDP experts also referred to this session with the señoras in Cusco's small town as a pilot. Before deploying treatments in larger populations divided into treatment and control groups, economists ran pilots of their experiments. This is a crucial step because "to do a treatment you first have to make sure that people will be able to use it." The 'it' is the treatment, and the treatment can be a technology. So, the pilot does not test user's acceptance but user's *ability* to take the treatment whether a deworming pill, fortified rice, or a basic phone for transactions. I didn't dwell in my questions on how exactly those pilots measure the ability of its participants to use the treatment, but if they are similar to the case of the women in Andahuaylillas, what gets piloted is a bit more far-removed and more inclined to the experts' side, as in checking the ability *to train them* or *explain them* how to use it —and that training or explanation may very well take the form of questions—.

This is not surprising if we think historically of development as a project system, one in which at least part of its interventions, if not most, are related to connecting already existing products with potential users. For instance, STS historian Michelle Murphy (2013) examined techniques of population management through development interventions seeding birth control methods in Bangladesh. She described the role of family planning surveys in those interventions (in which women are its main intended beneficiaries too) understanding them as "instruments intended to both measure and provoke mass feeling" (62). The KAP surveys (as in Knowledge, Attitudes, and Practices) "were typically the first step in setting up a new family planning program; they were deployed as a quantitative demonstration of the existence of a local "desire" (and hence justification)

for such an intervention, a numerical invitation to further meddling" (Ibid.). However, she demonstrates that while inquiring about a need, instead of just counting or measuring they were also actively creating it. In practice, as she recounts, family planning fieldworkers distributed samples and provided explanations on birth control methods as part of their 'surveying needs' task; they "simultaneously gathered data, sold promises, and offered contraceptive services for consumption within the very same encounter" (69). Thus, these surveys "helped to install infrastructures of persuasion as part of counting, and as the first act of family planning. They hailed desire while enacting its measurement" (63).

Counting and measuring are also explicit goals of RCTs, aimed at informing more effective development interventions than the ones conducted in the past.[103] As Daniel explained to me, the focus group version of economists is a small sample to see if their experiment design works, and to understand what they will be able to statistically measure later. One of the most fundamental steps is ensuring that your "population of interest" *understands the questions you are asking*.[104] Measuring people's knowledge thus implies also educating them in the language used by experts and their fieldworkers to classify them as potential experimental subjects (or not), as well as the services or products envisioned as candidates to fulfill the hypothetical unmet need being measured. In other words, RCTs appear to be the latest and trending tool for identifying untapped markets for products in search of users. To achieve this, a common knowledge ground needs to be established (or its existence prior to the intervention assessed). This is crucial for subjects to develop attitudes and desires for the products or services that the new experiment will soon offer.

[103] As its proponents explain, effective in terms of its goals of improving the lives of the poor in a sustainable manner. See Abhijit Banerjee and Esther Duflo's "Poor economics".

[104] Economists doing field experiments also use focus groups to help them define and adapt the questions that will then filter who can or cannot be a participant in the randomized control trial. Personal conversation with Daniel, October 10, 2020.

My friend brought a particular example of the only experiment he has done with electronic money with a bank in Indonesia. The bank defined the geographic area and the population they wanted, “nonagricultural entrepreneurs.” He tells me that the lab selected villages in the area, and in them, samples. “The first step is to do a listing, like a scanning of each of those areas with only four questions: Gender, age, what do you work in, and does someone in your family own the business?” to first filter the people who do not belong to the target (nonagricultural entrepreneurs) they were looking for. With the responses they “discarded all those who were not entrepreneurs" by their metrics. To discard and select, their questions filtered people. People also learned what kinds of subjectivities are more desirable and valuable in these interventions, even though the experts’ metrics and their cuts among categories may seem arbitrary from their perspective. For instance, what about seasonal agricultural workers who also have other trades? What counts as family (nuclear, extended)? Do subsistence nonagricultural businesses count as ‘entrepreneurship’ even when those businesses exist because people don’t have any other option (no stable jobs, no education)?

Daniel added that, as a scholar, “it's not that I work with entrepreneurs or that I'm interested in the category, it's what the bank was interested in.” A brief awkward moment of silence followed, in which I wondered how he reconciliates the fact that his research questions are dictated by the bank’s interests. Even if I was unable to say anything specific, he, knowing me for so many years, sensed the disturbance in the force, and went on: “if the service is going to be provided by a private company, you have to see how it could be profitable, right? and if there is no liquidity then it does not work." And at that moment he offered an insight that illuminated the transformations of development practices in its new encounters with finances that I have been tracing for so long and could not formulate as such. He did it casually, and matter-of-factly: “microfinance and financial inclusion partnerships and alliances are business tied to development, they are not development projects [*negocios atados al desarrollo, pero no son proyectos de desarrollo*].” *They are business*

tied to development; they are not development projects, I repeated to myself, my eyes wide open in response to what felt like a glowing revelation.

Daniel is a prolific academic writer, and professor who embodies in his practice this new world of collaboration and partnerships among international organizations, research universities, businesses and their innovation labs (which in the development community become 'poverty labs'), all in the lookout (albeit if for different motivations) for "the fortune at the bottom of the pyramid," as C.K. Prahalad (2004) encouraged at the beginning of the two-thousands.[105] Even if he doesn't particularly care about the entrepreneur category—which also features prominently in the work of Modelo Peru and to which the women in the picture are one of its representations (the 'rural' microentrepreneur) —through his collaborations and experiments, I suggest that he, along with the experts I followed in the field, *renders empirical* these divisions between the working or entrepreneurial poor and the poorest. What I am proposing is that the experiments not only measure and hail desire but are also attempts to ground the experts' categories in actual people.

Economists do renderings of data collected in experiments, they group it and categorize it to then represent it so it can be readable and meaningful (as in establishing correlations and corroborating or not the intended effects). Experimental subjects are transformed into data and represented through statistics. Statistics are in turn represented and made readable in charts, tables, graphics and indexes showcasing correlations, some more significant than others. Data becomes more empirical when rendered as images of the people supposedly represented by it. Through the production not only of statistics but of accompanying images, these representations are eternalized in brochures, presentations, videos, online banners and such further *empiricalizing* these categories—

[105] MIT professors Abhijit Banerjee and Esther Duflo provided with their experiments, the methods to better assess and provide products that 'the poor' will actually use and that became during the 2010s decade the commonsense idea especially with the publication of their research also in popular press in 2011 ("Poor Economics: a radical rethinking of the way to fight global poverty").

but as another useful-to-their-purposes representation (and not as actual people). These renderings are specially compelling and effective for audiences that are not local to where the people in the images live even though these audiences could be those of their fellow nationals (countrymen or *connacionales*) and not only international ones. These renderings in images *confirm* an already prevalent belief –that of the 'entrepreneurial poor'– even when the experts conducting the experiments may not be personally invested in this category, but rather their corporative counterparts.

Nobel Prize economists Abhijit Banerjee and Esther Duflo discuss in their book *Poor Economics* (2011) how the evidence from the field experiments makes them seriously doubt "the idea that the average small business owner is a natural "entrepreneur," in the way we generally understand the term, meaning someone whose business has the potential to grow and who is able to take risks, work hard, and keep trying to make it happen even in the face of multiple hardships" (225). They name this profile of people 'reluctant entrepreneurs' as many of "the enterprises of the poor often seem more a way to buy a job when a more conventional employment opportunity is not available than a reflection of a particular entrepreneurial urge" (226). What gets a family out of poverty is, according to their evidence, that at least a member of it has a stable income, so they can plan and invest in their children or younger siblings' education and better future jobs, and not microloans for subsistence and mostly unprofitable small businesses.[106] But still the category is operational and in use in Poverty Lab experiments classifying people in a way that even its experts doubt, perhaps because these are business-academy collaborations, and microfinance is a service the proponents of the experiments are interested in seeding in these places.

During our conversation, I felt a familiar uneasiness creep inside me, the sudden stiffness in my neck, my eyes blinking frantically. In these poverty partnerships, economists' experiments ask

[106] Abhijit Banerjee and Esther Duflo clarify that "they are not saying that there are no genuine entrepreneurs among the poor—we have met many such people. But there are also many of them who run a business that is doomed to remain small and unprofitable"(2011: 225).

the questions of the companies that fund the research, like scientists working with big pharma, and some 'populations' are targeted, and others left behind, as they are beyond financial 'salvation.' There is no treatment available to them and that is defined beforehand by corporations funding the poverty experiments. Then these knowledge production exercises are grounded in the actual people of the next intervention or RCT, even when the main scholars propelling these methodologies are reluctant to trust that categorization.[107] The worlds that we are bringing to existence.

Jeffrey said that the intended target of Bim were these women that he described as "female, indigenous person who is also a merchant" but Daniel also kindly told me that it is disingenuous to believe that they are. In his words: "you can't expect the women to be the target or beneficiaries of these initiatives' first rounds, but it is expected that its benefits will trickle down (*chorrearán*) to them in the future." So, I asked Carolina to clarify this. Carolina, who was the first Minister of Inclusion in Peru, and later Modelo Perú's first general manager, confirmed what Daniel commented.[108] "They were for me" she said in her email, "a group that had to be cared for." She added that she would not call the women selected for these test/training sessions the target group of the platform; rather, she saw them as a group within the group of users, more like "a guarantee (*garantía*) that Bim would be inclusive if it could reach them." For her, Bim had to be designed in a way that people with the women's profile – "rural entrepreneurs, with indigenous descent, and low-income"- could be its users, even though they "would never be the biggest group of users."

[107] In their writing, Banerjee and Duflo question the category but in the Poverty Labs practice the category is very much alive and shaping conditions of possibility for people. "So are there really a billion barefoot entrepreneurs, as the leaders of MFIs and the socially minded business gurus seem to believe? Or this is just an illusion, stemming from a confusion about what we call an "entrepreneur"? There are more than a billion people who run their own farm or business, but most of them do this because they have no other options. Most of them manage to do this well enough to survive, but without the talent, the skills, or the appetite for risk needed to turn these small businesses into really successful enterprises. (…) Microcredit and other ways to help tiny businesses still have an important role to play in the lives of the poor, because these tiny business will remain, perhaps for the foreseeable future, the only way many of the poor can manage to survive. But we are kidding ourselves if we think that they can pave the way for a mass exit from poverty." (233-4)

[108] Email exchange with Carolina on October 18, 2020.

The last sentence of her email portrays to me the heart that she put in this, her commitment with inclusion: “It had to work for everyone, *even for them*. That was my logic.” (my italics). In her logic, she wanted at least to make sure that when the platform was running, this profile of people would not be excluded by it; that mobile money would not be a new barrier in their lives. In framing it this way, her email also exposes that Carolina, like Daniel, knows how development actions reify inequality –and perhaps even more when these actions take the form of ‘business tied to development’-. The women considered rural, indigenous, and low-income are still conceived as the most excluded of the excluded, the last wheel in the last mile, the ones at the end of the stream to whom eventually (at least according to these experts) drops of whatever is imagined as ‘progress’ will trickle down to them. They are not the center; they are a *guarantee*. They are the ones who experts hope not to leave behind, confirming through a pilot that they are ‘trainable’ in the use of some technology. So, the story goes, when mobile money promises trickle down, they are prepared. The very vocabulary that designs them keeps them (or *empiricalizes* them) in the excluded position.

This exploration confirms that the test, even when called a ‘focus group,’ is not related to the marketing of the product with potential users and it doesn’t test acceptance and possible improvements to it. Rather, it is like an initial pilot of development economics’ experiments as it tests women’s ability to use a familiar technology (basic cellphone) for a new purpose (transactions). The difference though, is that this pilot doesn’t initiate a larger experiment in which Bim is the treatment, it remains as a pilot.

A picture that has a ‘use story’ and a ‘use history’

It occurred to me that Carolina was already struggling with Modelo Peru’s bankers in pursuing her inclusion agenda. These señoras were entrepreneurs by their metrics, but not really the first group expected to use the mobile money platform Bim –not even for Carolina-, and a hard pitch

to sell to the bankers. I know from my time in the field that initially the plan was to run many pilots, with different profiles of 'unbanked' people but that was contingent to banks' funds. And it never happened. It seemed as if the struggle between bankers' interest in digitization of cash and Carolina's emphasis on inclusion resulted in this hybrid public pilot for the press, perhaps the only one in which she was able to put her foot down, and which never became the beginning of an experiment in which Bim could have been the treatment offered to a larger sample of people.

This exploration has shown transformations in development practices too, in the form of collaborations between academia and business—either tied to or attempting to link with development (or to 'the poor' as an untapped market). In poverty labs, corporations (whether big pharma, agrobusinesses, or banks in this case) set the wider agenda for the field experiments (i.e., focus on entrepreneurs; mobile money products). This is not a new situation; what my research shows is perhaps a new simplification or short-cut—or a new intersection, this time with design practices—, in which all gets reduced to a pilot that produces a picture and, supposedly, confirms usability.

For a pilot is like a mockup or demo often employed in prototyping practices, to demonstrate that something works to a founder or various constituencies from which a project needs support to materialize. The pilot is not for the users even if it needs the users to perform it. The pilot is done to show that the women could use this technology, and it has multiple uses. One, what Carolina wanted, is proving that inclusion is possible –and what counts as proof or warrant here is that the women were able to perform mobile transactions with their phones using Bim-. They make this action count as proof even if it was closely guided by facilitators and even if the women end up not using the platform at the end.[109]

[109] The logic could be something like this: because we have shown that they can use it, if they don't use it then it is their fault. Informants in Perú told me by the beginning of 2024, that even though transactions via mobile phones (as Apps) are spreading around urban areas in the whole country, particularly since the COVID-19 pandemic and



Figure 2.5. On the left, a screenshot of The Guardian's article "Peru mobile money scheme could herald a new dawn for nuevo sol" by Dan Collyns, October 2015. On the right, the same image as part of Bim's initial online advertisement.

I have mentioned already that the picture has a 'use story' and I want to suggest that it also has a 'use *history*.' The use story is that the women are using their cellphones as transactional devices there; they are replacing their cash with digital payments. Take for instance the images in Figure 2.5. On the left, we see a screenshot of The Guardian's article "Peru mobile money scheme could herald a new dawn for nuevo sol" by Dan Collyns published right after the pilot in October 2015, which shows a moment from the Chincheros' pilot. The woman facilitator, seen in previous pictures, guides Cirila Quillahuamán (whose name we know thanks to the author of this note) by the arm, positioning her non-smart phone for the picture. In The Guardian's article we learn that Cirila "makes a living from community tourism and selling her intricately detailed knitwear – including typical hats with earflaps – to the many tourists visiting Chinchero's Inca ruins and colonial church on the outskirts of Cusco." This is what Cirila, quoted in the article, says about Bim (which she encountered in this pilot phase): "More than anything, Bim is useful because I don't lose a day's work if I need to buy more balls of wool," "If I have to go into town to buy wool, I'm wasting time when I could be working." As Collyns adds, what she values is "the ability to pay by phone" which

the long mandatory lockdowns in the country. However, their take off is still slow in rural areas, especially in those not connected with tourism or with banked people from urban centers close to the small towns.

"means the wool can be delivered directly to her".[110] What Cirila values is the possibility that Bim promises at that point in time because Bim does not yet works as an ecosystem for digital money with points of cash-in and cash-out where money can enter it (see Chapter 4 on this). She is reflecting on the potential of this technology that she is learning to use with the help of the facilitator that guides her in the picture. Her words portray a future agency that the chosen picture contradicts (as always needing the help of development practices). The same image which portrays the woman without apparent agency, was briefly used in some of Bim's initial online advertisement but soon replaced by depictions of more urban and younger characters—still entrepreneurial, yet not exclusively women and without facilitators guiding them.

The story is told with these women and in these terms because the image of the "rural" women sells (not necessarily to bankers but to international audiences), it is already a thing in the world of global development, it confirms a dominant imagination of who the subjects of economic improvement are—even though not even the developers of this technology believe that they will be its main clients. The pictures of the women of these two "focus groups slash learning sessions" as Jeffrey described them, which happened both in October 2015 and in two of Cusco's region small-towns (Andahuaylillas and Chincheros) are still in use, as of January 2024, in different online sites and still telling that story.

Another use of the public pilot is to prove, in the logic of experts, that digitization of cash is possible *even* with this population. Because it is an experiment in the form of a pilot and not a fully deployed field experiment (such as the ones run by Development Economics), the proof is not new statistics, but images and stories. Rather than Bim's clients, the pictures depict women that attended the only two (public) pilots of Bim's platform. These pictures were used to make presentations to

[110] In https://www.theguardian.com/global-development/2015/oct/09/peru-mobile-money-bim-banking-financial-inclusion (Published on 10/09/2015).

people in the Better than Cash Alliance, and there the woman was not 'believed' to be a user, she is there to let them know how the research is going, it was taken to show the experiment. By being in the picture, she signals that the experiment is going well. Jeffrey also used some of the pictures of these pilots on his consultancy business website (Bower & Partners, Bower is his last name). There, as he mentioned to me, the picture works as evidence of his work upon which to build his reputation as a financial development expert.[111]

The woman, thus, needs to be in the picture for inclusion to seem feasible and move forward digitization of cash *along with* the set of practices, experts and institutions that are building and capitalizing upon her image to create the next set of interventions independently of the success of this particular one (or with its 'lessons learned'). Because the experiment seems to be going well, then this picture—the evidence of a pilot, a 'use history'—confirms the 'use story' and can then be connected to 'global' statistics or numbers from other places and other times assumed to be similar in Peru, solidifying further this imagination. It plays its part in the echo-chambers and feedback-loops of development as a project system.

I say the picture has a 'use history' also for another reason and in a slightly different sense. Carolina resigned from her position as PDP General Manager in 2016, in part because, as I heard often from people working in this project, after all, banks *are not good collaborators*; Jeffrey, moved on to other consultancy projects on digital payments, building on the reputation he created for himself with Modelo Peru and the BTCA.[112] Nevertheless, by the time I am revising this writing it is January 2024 and the women of the pilot they organized and for which they dreamed this mobile money platform, are *still there* in PDP's institutional website, announcing a *new* payment method in

[111] Email exchange with Jeffrey, August 2020.
[112] Email exchange with Jeffrey, August 2020.

their key cellphones, which were already *old technologies* in 2015, when the pictures were taken (Figure 2.6).



Figure 2.6. The rotating banner on PDP's website homepage features images of women from the 2015 Cusco pilot. In: https://pagosdigitalesperuanos.pe/ (last accessed 01/23/2024)

The rotating banner on PDP's website homepage features images of women from the 2015 Cusco pilot. Among the three images, only one depicts a woman conducting an actual transaction with her cellphone. The remaining two show training sessions, where a woman facilitator guides businesswomen in using technology. In one image, a giant poster of a basic cellphone substitutes a real device for practicing Bim's menu options. The images alternate, while the consistent message ("A new payment method to do the same but in a different way") remains fixed on the webpage. However, due to this rotation, in two pictures, the patriotic red and white fonts of the message, resembling the Peruvian flag, partially cover the women's faces, similar to Bower & Partners'

website. The third image cuts off half of a woman's head regardless. Despite Bim's transition to a smartphone-exclusive app in early 2018, these pictures continued to alternate online through the end of 2023.

The technology these pictures portray (the 'brickphone') is almost obsolete now (2024). Bim, the mobile money platform hasn't worked with this type of phone since January 2018, only a bit over two years after the picture was taken. PDP moved Bim's menu interface (1: Send money; 2: Put Money, 3; Top up Cellphone) to an App, and it cannot be accessed with the phones with key numbers and their non-smartness unconnected to the Internet, the phones that the women in the picture have, and with which they were trained to use Bim in late 2015. In other words, these pictures do not even represent how Bim's technology works since early 2018, as it requires of its users to have smartphones and internet connection.

These public faces from a *micromoment* in the history of mobile money in Peru, the one moment in which Modelo Peru's designers actually reached out to them, flattened by virtuality and eternalized in these different institutional websites that are still using its pictures, are supposed to represent that this technology is ever pursuing this fight against cash for the improvement of the lives of 'the poor,' working for their inclusion. But this is the website of the company that administers the mobile money platform (Bim) for the Modelo Peru partnership of banks called PDP (pagosdigitalesperuanos.pe). It is not the website of the mobile money platform itself which was more frequently updated (mibim.pe) and was actually oriented to Bim's imagined users and not to their 'guarantee' (the 'rural merchant women' in the picture) as seen in Figure 2.7. In PDP's home page, there is a link to go to Bim's page, the page of the actual mobile wallet platform. In Bim's website –which does not link back to PDP's website-, images portray urban entrepreneurial Peruvians, (one with an apron, like the woman in the first picture), and younger than the women participants of the pilot.

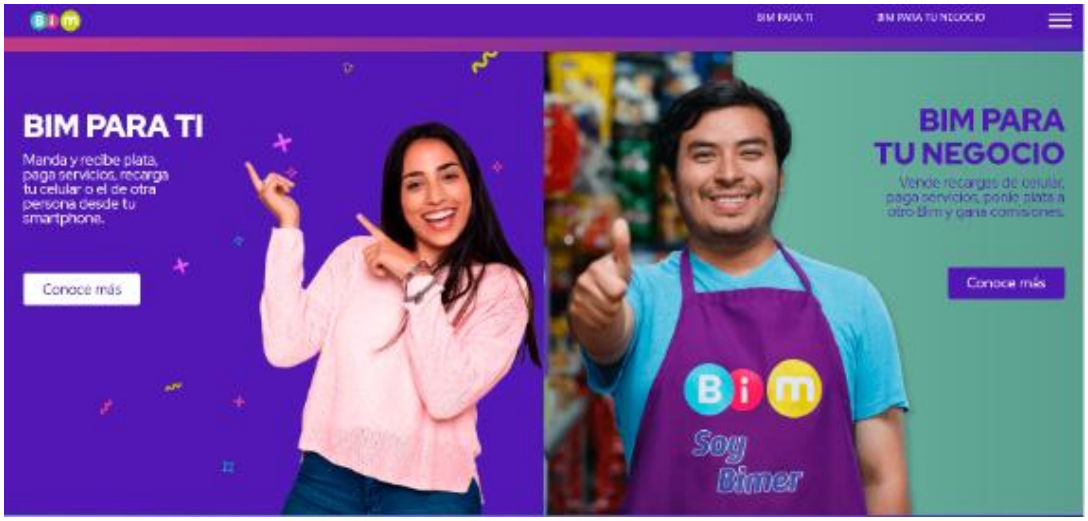


Figure 2. 7. Detail of Bim's website home page. In: https://mibim.pe/ (last accessed April 2021).

To put it differently, both websites are marketing tools for two different audiences. There is the *real* yet still imagined audience of users (young entrepreneurial urban limeños, women and men) for which Bim is designed (Figure 2.7), and there is the audience of financiers of Modelo Peru in which one could see that Modelo Peru is *still and always* trying to include these 'poor rural women' even though they are not selling Bim to them anymore (or were never selling it to them in the first place). It is not that Bim (the mobile money platform) has different types of imagined clients and designs differentiated marketing strategies for them. The 'rural women' in the picture, are not Bim's audience, but rather they are there as one of its pipes, the *public face of the model* to be consumed by other publics: Modelo Peru's stakeholders, national and international; the publics of experts designing digital payments slash digital financial inclusion projects.

To fulfill their function in the project, they need to be forever represented as Bim's past. Instead of including the women in the newness of this transactional technology, these images have the opposite effect: they trap them in Bim's past. It is not only, as it is often the case and has been largely studied, that this financial project locates 'rural,' 'indigenous' women in the past –in the time of the others- in which modernity discourses often put them, denying them their contemporariness or

coevalness (see Fabian 1983 and Povinelli 2011, among others). These images and their endless online reproduction locate them in the history of the technology that these experts are promoting. While the way to access Bim wallet changed years ago, their pictures are *never* updated (say for instance as images of similar businesswomen with the type of phone in which Bim actually works—a smartphone) showing that women's inclusion was never their main focus or problem. The women must remain in the picture to work for Modelo Perú, even if they have slipped out of it already, years ago, just after the end of that day in Andahuaylillas in which instead of going to work, they went to this training.

Conclusion: A user that is a picture, and a picture that is a pipe

> In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacle. Everything that was directly lived has moved away into a representation. (…) Everything is pointing to something else; everything is a representation. (…) The spectacle presents itself simultaneously as society itself, as part of a society, and as the instrument of unification. The spectacle is not a collection of images but a social relation among people mediated by images.
> (Guy Débord, The Society of the Spectacle, 1967, 1-4)

My chapter has shown that the main function of the women, or the way in which they are mostly present is as representations. They must be in the picture to index the feasibility of their own inclusion via digitization of cash economies through basic cellphones. They stand for a concept (viability of financializing the poor via mobile technology); the picture fleshes out the abstract development narrative and its numbers into a supposedly real women using the Peruvian mobile wallet Bim as a method of payment that replaces cash.

Yet, I am still wondering if that is their only function, even as representations, as their presence seems to be standing also as a placeholder for some other relation of representation. It seems that they *stand for* but also, they *stand instead of*. In the next chapter, I suggest that the women stand instead of cash. I suggest that a population, the unbanked, with the women as its most visible representation, act as a proxy for cash. Cash slows down finances and profit, and to intervene cash, a population needs to get designed and intervened in turn.

But before that, to conclude this chapter, I invite you to look at Modelo Perú in three levels. First, there is the women's picture's function: the point of the test is the production of an image. Modelo Perú proponents are making the image of a platform that at that point in time, didn't fully exist yet (it was still at the testing phase) and may never exist, but which still produces an image that does its own work at the international level and with the national government. Put differently, while these engineers and bankers design a mobile money technology, they are necessarily also designing an imagined 'poor' with the help of these women. Even if the women never use the mobile platform again, the practices of bankers, engineers, and the women testers they invite to their trainings, trials, and pilots as well as the documentation they harvest out of them continue to recreate and reproduce that imagined 'poor'. This image in turn fuels the appeal of Modelo Perú, not in the local spaces of these women but in other places and instances (i.e., international development and finance circuits, national policies), a sort of 'macro' charisma. Macro visions that efface the real people pretty much as the field experiments on poverty –did they ask people if they needed fortified rice, a deworming drug or mobile money in the first place? -.

Secondly, at the level of the actual, real women interacting with this imagined 'poor' representation which informs the practices and technologies assigned to them, we see that instead of perhaps teaching them how to use the system both in a keyboard phone (which they owned at the time of the public test) and a smartphone with internet (which was the direction that mobile

technology was already at that time heading to, and presumably, also an aspiration they shared with other mobile users), they only worked with keyboard phones and no internet. The real women get assigned a pace other than the one of finances and smartphones reserved for other kinds of users, that is the pace of development projects which traps the women in the technology's past, as part of its use history. This mode of operating will keep the women in a position of exclusion and in need of new interventions to catch up with the rest. It is the 'modern poor' who, even when they are tried to be saved by this and many other techno-solutionist development projects, they are always produced as 'less than modern' or 'submodern'. In this case, they are confined to be part of a point in time on the history of digitization in Peru and of Bim's history, and not necessarily constitute its present or its clients.

Thus, more than improving a situation for the poor, they seem to be producing what STS historian Michelle Murphy calls "experimental governmentality". It is a dynamic that both assumes a "self-perpetuating relation of rescue" and then produces information that extends that relation into the future (2017, 79). Andahuaylillas becomes like a demonstration town, an experimental platform in itself, in which with the help of the women's underpaid labor (or simply unpaid as they received no retribution for their pictures and the right to use them endlessly), Modelo Perú developers keep the actual women in a particular position (the less-than-modern loop). They intervene with something that may or may not help the women's economic conditions, but they don't intervene too much so they can keep studying those conditions.

This circles back to the idea of development as a project-system, and projects as ideal vehicles to disperse state and/or donor funds to patrons, clients and collaborators and also to NGOs which depend on a flow of project funds, a system in which "the most strategic outcome from a project is to generate another project" (Li 2021). What my account has shown, is that this sort of experimental governmentality can even work speculatively, through the promise (or the test) of a

system that was not even in use by the 'rural poor' women of Peru. That is, the project-system logic may work even if the project just stays as a mere pilot, and not even a fully deployed poverty field experiment or some other type of intervention.

In that sense, my research illustrates not only the 'acceleration' of cash into digital but the acceleration of development practices into their new form as businesses-tied-to-development, a moment in which straight for-profit projects present themselves as development (in the form of financial inclusion). The business logics prevails so the imperative of helping the poor, however complicated it might be in practice, is pushed to the background, doesn't have the traction to move from test to project, it stays as a pilot, which allows the businesses to actually develop their products in newer iterations with some insights from this experimentation and the data and images extracted from it.

My account also ethnographically documents the encounter of development as a 'project system' with the design practices of the tech start up culture that has been now incorporated in banks' practices through their 'innovation labs' and which creates objects to work as 'proof of concept.'[113] The bankers' experimentation, seen retrospectively, seem to be following what in the tech and design industry is known as "build-measure-learn feedback loop" methodology.[114] Bim is a boundary object that aims at creating a "favorable investment environment," convening potential partners, investors and attracting capital. Modelo Perú as a financial partnership business model and Bim as a resulting mobile money platform are both, in the language of user-centered design (UX), sort of "Minimum

[113] According to historian of Science and Technology Finn Brunton, "the term originates with NASA in the late 1970s, when they were working on "technological readiness levels," ways of characterizing how close a technology was to actually working." The many things that were viable but had never been tested in space were classified as "proof of concept" and from there "the term's migration into startups and design culture seems to have mutated it into something more like a demonstration or rendering of a hypothetical object in practice." Personal conversation, November 2023.

[114] Design Fiction: https://www.wired.com/2011/02/design-fiction-diegetic-prototypes/ and https://nearfuturelaboratory.com/what-is-design-fiction

Viable Products" from which the banks can assess if it is worth it to actually build these technologies and entertain these kinds of for-profit collaborations among competitors.[115]

In that sense, the whole town of Andahuaylillas where the pilot was performed using the women and the basic phones, and the small shop, can be seen as a 'diegetic prototype' (Kirby 2010); the whole town is the test. David Kirby coined the term 'diegetic prototype' to signal technologies that only exist in the 'diegesis' which is the term that film scholars like him use to refer to "the fictional world" where these technologies "exist as fully functioning objects" (43). Using "dialogue, plot rationalizations, character interactions and narrative structure" the presence of these potential future technologies in the film visually "demonstrate to large public audiences a technology's need, viability and benevolence" (Ibid.). Diegetic prototypes, his research shows, have been very important in fostering the development of technologies in the real world, from the medical field to space exploration. The narrative of empowerment through digitization of cash is thus fleshed out through Andahuaylillas, as a sort of 'Potemkin village' made to impress international donors, tech enthusiasts, and national finance ministers.

In the third and final level, I propose to look at Modelo Perú as a platform to hold space. Seen retrospectively in 2021, bankers, Carolina and Jeffrey alike, and government regulators, all commented to me that in one way or another Modelo Perú had worked, that it succeeded. This comment stunned me every time, because the usage of their mobile money technology (Bim) failed to scale up, it kept 'surviving' and only being used in particular places where there was also a direct intervention of Bim advisors and their marketing strategies (see Chapter 4 and 5), but it didn't achieve a significant and steady growth of users and of digital money circulating through its pipelines. Bim is still alive, but it didn't quite reach the scale that its engineers expected: it hasn't

[115] Specially by the beginning of the 2020s, four years after Bim's launch, even PDP's engineers were using this vocabulary to refer to Bim (as 'MVP'). Personal conversations with PDP engineers.

been so far massively used to transport and transact with digital cash, despite all their efforts, commitment, and ingenuity.

Though if we think of Modelo Perú, as an in-the-meantime project and laboratory of the banks which united to create their shared mobile money platform Bim to please the government and hold space while they figured out their independent and proprietary mobile/digital payment technologies, then it certainly was successful. Modelo Perú worked to keep the government discourse and performance of financial inclusion alive while it held space and time for bankers to create other non-collaborative and highly secretive mobile wallets of their own. These other wallets were designed for smartphones as Apps, which were launched almost in parallel to Bim and in direct competition to it, and which would then be fully supported by each bank and sold to unbanked populations and advertised too as 'financial inclusion.'[116] These Apps, particularly one called Yape, have become ubiquitous in its use, including in rural towns connected to tourism. This process only took off with the COVID-19 pandemic, when cash became a health threat as a potential vector for infection which has made digital payments thrive in Peru –but that is yet to come (see Chapter 3).

Returning to the women who participated in the training sessions, I don't know the names of the señoras, no one could remember them, and I didn't have the chance to meet them. So here I am going to speculate guided by my former experience as a development practitioner in IT projects in the Peruvian Andes. Real people who development practices categorizes as 'the poor and rural women' are familiar with development interventions, these are often part of their daily life. They are

[116] Banco de Crédito del Peru (BCP) the main bank of Peru and biggest partner in Bim, launched its mobile payment App YAPE, on 2016, the same year that Bim was launched. See: https://larepublica.pe/economia/2019/09/17/yape-se-expande-y-podria-convertirse-en-competidor-del-bcp-en-menos-de-dos-anos-mdga-bancos-smartphone-app-aplicativos BBVA and Interbank launched their own mobile payment Apps as well (Lukita and Tunki, respectively) around that time as well and later, in 2020, they united to create an interoperable App along with a third bank (Scotiabank), sort of the U.S. Zelle, called PLIN. See: https://www.businesswire.com/news/home/20200527005225/en/Peruvian-Banks-BBVA-Interbank-and-Scotiabank-Launch-PLIN-Using-YellowPepper%E2%80%99s-Real-Time-Payment-Platform

front line witnesses to its 'evolution' from development projects into businesses tied to development. If they care to think that much about it, perhaps they may even have their own chronologies of development -from when the technology offered were toilets, or agro-technical support (veterinaries and soil experts), or Monsanto's pesticides and seeds, or "transparencia y equidad de género" (transparency and gender equality) in local governance, to digital money now-. They are used to attending experiments, training sessions, talks, they participate as beneficiaries of their programs. Some are, in fact, "caseritas" (regulars) in those activities; they are mapped out by NGOs, state programs and else and it is not unheard that they recommend participants to each other's projects.

What do they make out of development interventions? I cannot know and it seems a good question for new research. I can speculate that, perhaps, for regulars, it gives them status among their peers, or something different to do on any given day, and some marginal gain in information about other worlds intersecting theirs, or in the form of merchandising gifts, food, or money for attending. They can share what they learned with their communities, but not so much as in 'a new technology or technique learned.' Rather, as something to talk about at the end of the day, in the main plaza of their towns, as the sun goes down, or during the weekly farmers' market day. One thing I know though: *there is nothing extraordinary about these projects for them*. Modelo Perú and Bim's public test is just one more iteration of a relation to which they are useful.

I wondered if the woman with the mandil had seen these pictures. I wondered if she knew how much her image has traveled. I wish I could ask her what she makes of this (micro)moment eternalized in virtuality by Jeffrey, Carolina and Modelo Perú for the (macro)world of the digitization of cash slash financial inclusion. Did she need them and a mobile money platform as much as they needed her for the picture? I wondered about the things that she left undone to attend this training and if it was worth it; what were her expectations, calculations, curiosity? She was the first person to perform a 'live transaction in the market' with Bim, her image has travelled around the globe pasted

into different Modelo Perú's presentations and banners, and it is still lingering there in the virtual space of BTCA's website, but no one could remember her name. I wish I could ask her, and the other women whose pictures continue to alternate in a never-ending loop in PDP's institutional website, if she, if they, would also like to have their real names on this writing.[117]

[117] While the experts I did my fieldwork with and interviewed for this chapter agreed to have their real names in my writing, all names have been changed to pseudonyms, except those from public figures.

CHAPTER 3

Cash, Banking and a Population as a Proxy for Money

Introduction

This chapter brings cash to the forefront of the digitization practices I examined during my research. The opening picture of the previous chapter—of the woman with long dark braided hair, wearing a brown wool hat and a merchant apron, holding a non-smart cellphone, and staring at the camera on the stone-paved street in Andahuaylillas—is part of a composition of image and text for a presentation by the Better than Cash Alliance (as seen in Chapter 2, Figure 2.1). The text reads: "Modelo Peru: The world's first shared mobile payments platform," and is the title of a Webinar organized by the Better than Cash Alliance (BTCA). At BTCA, what is better than cash is digital payments. Cash slows down finances; the pace at which it circulates is a problem in need of acceleration. The photograph suggests that women like the one in the picture are using their cellphones for payments instead of cash in Peru, thus playing their part in the acceleration that BTCA promotes. Because cash is expected to be digitized (and is already represented as such), it is absent from the picture.

In this chapter, I bring cash back to the picture, so to speak. Building on and expanding the topics opened in the previous chapter, I propose as a point of departure that the representation of the women—within a wider ecology of financial development practices, along with similar portrayals from other 'developing' and 'underbanked' regions—not only symbolize the feasibility of financial inclusion, as was my argument in the previous chapter, but also serve as a substitute of cash, and I will explain this soon. The women stand in the picture for financial inclusion *and instead of cash*, which is what banks and governments seek to capture and surveil.

If my attention shifts to cash, then this exploration takes me to banks and governments' problems with cash (it decelerates finances and is difficult to track) and their efforts to digitize it—in contrast to people's preference for cash. I argue that as part of those efforts –and in dialogue with international development institutions, and national and international regulators –, 'the poor,' as a population abstraction, gets conceived as the source of their problems with cash. The aim is to highlight how cash, which is often absent in this imagery that wishes it gone already, is central to these practices, while the women, are positioned as symbols of financial inclusion, effectively standing in for cash.

In this chapter I draw on Isabelle Stengers' notion of "ecology of practices" (2005), to examine how practices of banking, digitization/inclusion, and cash transactions unfold in the presence of each other and other financial practices (via credit cards, cellphones, suitcases full of US dollars). My attempt is to think ecologically (Choy 2011; also, D'Avella 2019) about these practices and the "transactional communities" (Swartz 2020) they make, and how through their relating it is possible to have a sense of their borders and how they connect and diverge.

I situate this chapter in conversation with various works in the field of anthropology of money and *unbanking* (Peebles 2014). Bill Maurer analyzed, for instance, the different narratives that professionals of "the networked assemblage calling mobile money into being" were telling each other while "seeking to understand, shape, and profit from the payments space" (2012: 595). He identified four not mutually exclusive narratives that captured different aspects and cast different characters. One is "the empowerment story" mostly about the rural unbanked of a developing country with relatives in the city or abroad and with goods or trade and cash, with access to mobile phone or a

communications network but not to financial services.[118] This is obviously the narrative that my work centers in as it powers the drive for financial inclusion.

When Maurer studied it, however, it was mostly a story told by the telecom industry with the successful case of M-Pesa in Kenya in late 2000s that he closely followed. On it, mobile phones were a tool for the poor to reach money and finances *without needing banks* or *banks accounts*. These were the early deployments of mobile money in which its novelty was precisely that of being *an alternative to banking*: a corporate yet *unbanked* digitization of cash. Digitization via telecoms was initially *designed as* 'not banking': mobile wallets worked as 'electronic piggybanks' which meant that people kept control over their money which could not be lent as savings can in the form of credit (Maurer et.al. 2013).[119]

My focus is instead on a time in which banks are actively experimenting with mobile money, attempting to win this market over telecoms (mid-2010s). All the while they are keeping this empowerment narrative especially when dealing with the state, international development, and the country's main media, as this story was still internationally dominant when they formalized their partnership in 2014. But the narrative necessarily changes –as does the technology now connecting banks to telecoms to do mobile money in ways that keep the banks as the ones in control of money

[118] The other three narratives are: 1) "The market share story" where the consumer is the migrant who wants to send money back home, and for whom remittances services and their high fees are a problem. High costs of transactions are a problem both for sender and receiver. 2) "the commoditised payment space story" in which consumers are virtually absent, or their characteristics don't matter that much, just persons who use small amounts of money everyday, or the public is the payment service companies. 3) "Tulip story" where Maurer asks if "publics just imaginations of speculators?" and speculators include not only venture capitalists but also development professionals. (Maurer 2012: 595-597)

[119] On the differences between a mobile wallet as piggybank vs savings account see Chapter 1. Also, as early as 2009, as Maurer describes, "development NGOs, international poverty alleviation organizations, and some prominent philanthropic foundations have exhorted mobile network operators to do more than simply provide funds transfer and payment capabilities. They want operators to design mobile phones that can act like piggy banks or full-fledged savings accounts as well. As Bob Christian, Director of the Financial Services for the Poor program at the Bill and Melinda Gates Foundation, stated to the attendees of the second Mobile Money Summit in 2009, "it's time to meet the savings challenge."" (2010, 3).

instead of telecoms–. In that sense, my examination illustrates the tensions of adapting this story to justify the design of digitization of cash *as banking*, instead of as an alternative to it. I take a closer look at how it gets constructed and deployed –by assuming that cash is a problem for 'the poor'–, and how it is confronted by other narratives in which banks are the problem, and with practices that do not include them.

Thus, while the women testers in their embodiment as the face of development as financial inclusion were the heart of last chapter, here I shift to the national and international spaces and narratives where these images and discourses are produced and circulate, in constant back and forth between the 'local' field and 'global' arenas. I shift the focus away the picture of the women, and make a first stop at BTCA, the international organization housed at the United Nations in New York City, that organized the Modelo Peru webinar, by examining the narratives on digitization and financial inclusion they publicly disseminate through their website. Then I move to Lima, the capital city, and to conversations with a central banker and an engineer working for Modelo Perú to analyze cash, its affordances, and the practices that seek to transform it.

I examine first the problem with cash that banks and governments have (as in handling its materiality and the anonymity connected to it which slows down finances, profit, and taxability) and how 'the poor' and 'the women' (as both 'the poor' and the 'microentrepreneur') are brought to their narrative and explanations by examining BTCA's discourse in its website. Then I contrast it with the problem with banks (and the preference for cash) that people these experts categorize as 'unbanked' have.

The third section is a fast forward from 2015-2016—when the test with the women was performed and Bim was launched—to 2021 when the digitization of cash via mobile phones in the country was well underway mostly through the mobile payments app Yape, developed by the largest bank in the country (BCP). I offer a vignette from my fieldwork: a master class on banking and the

affordances of credit and cash for differentiated types of clients, presented by an engineer I frequently accompanied in the field which grounds discussions opened through the chapter. This section further examines the affordances of digital and paper money for differentiated types of clients. I also explore what kinds of futures these money technologies envision, at what scale (national or global), and the role of banking and social development practices in shaping these futures.

I conclude with a counter story involving some of the same protagonists who advocate for the digitization of cash for 'the poor,' but who, in this instance, reserve the right to use cash for themselves for specific political purposes. Notably, this story includes the CEO of BCP, the largest bank in the country, owner of Yape, and major investor in Bim, who purportedly used suitcases full of cash in foreign currency (US dollars)—in his words, to 'save the nation.'

Profit- or what cash slows down

The Association of Peruvian Banks (Asbanc) conceived Modelo Perú –and their mobile money platform named Bim– with international support from the Better than Cash Alliance (BTCA). This support was primarily technical rather than financial; it focused on knowledge practices and frameworks to help imagine and prototype their mobile money model in conversation with other initiatives from other regions. Or, in other words, BTCA significantly contributed to doing the work of translation and comparison of Modelo Perú's practices along with the initiatives (Latour 2005). BTCA's involvement also helped Modelo Perú gain international recognition as the project was literally translated from Spanish to English, allowing it to circulate in international development knowledge/power practices and their future-making politics, as we will see soon.

Housed at the United Nations in New York City, the BTCA is a partnership of governments, international organizations and companies "that accelerates the transition from cash to digital payments" to advance the UN's Sustainable Development Goals.[120] BTCA operates its strategies in what they classify as 'developing countries,' a category that includes Peru, where most people use cash instead of banking services.[121] The Peruvian government is one of BTCA's founding members. I start this section exploring the discourse that this multilateral organization promotes.

According to the Better than Cash Alliance's website, most of the "more than 1.7 billion people in the world are still unable to participate in the formal financial system" are women. [122] For the BTCA, this lack of participation in the formal financial system "makes it extremely difficult for poor people to save for the future, provide for their family's health and children's education, or invest in a business" (my underlining).

Apparently, cash slows down poor people's economies, and in the household economy unit imagined in these lines, women are the center. This is an often-told story, one that circulates widely, and which, as already stated, turns actual women into the preferred subject of microfinance and financial inclusion projects around the world. For the Alliance digital payments are better than cash for the poor because: "the harsh reality is that the only way to make or receive payments for many poor people across the world is by using paper money in the informal sector - which is a barrier to the use of formal financial services" (my underlining). The Alliance associates paper money with economies that banks do not mediate, and which states around the world consider difficult to estimate and tax, what they call "the informal sector." In the progressive way of thinking of the

[120] "About the Better than Cash Alliance," Better than Cash Alliance. Accessed September 19, 2021. https://www.betterthancash.org/about.

[121] 60% of Peruvians only use cash for transactions. Accessed August 20, 2021. https://revista.andaPerú.pe/pagare-en-efectivo-modalidades-de-pago-que-los-Peruanos-utilizan-para-sus-compras-de-productos-y-servicios/

[122] This one and the following BTCA quotes are from https://www.betterthancash.org/why-digital-payments. Last accessed 10/20/2020.

development community and its alliances, in which something is expected to happen in predefined stages or steps, the poor circulating money in cash or keeping it in any different arrangement than as savings in a bank is considered 'informal,' and these (slow) practices precede its 'natural' evolution (or formalization and acceleration) into banking.[123]

The evidence, however, even from industry-led research (including RCTs, as discussed in the previous chapter), signals that the poor's most pressing need is stable jobs and not participation in the formal financial system through savings accounts and microloans. That is, they need ways to generate capital and not so much, or not primarily, ways to store and increase capital. Yet the poor and the women are brought to this explanation to justify that the latter is their main problem. I suggest that, on the contrary, they are instrumental in the pressing 'problem' that the existence of these cash economies poses for banks, particularly in a time in which another industry (mobile network operators or telecoms) have just figured out how to capitalize on these economies and are using the banks as mere intermediaries of it (See Chapter 1 and 4, also Maurer et. al. 2013).[124]

For instance, even though the BTCA's argument on why digital payments are better than cash started in the usual wording/sentence structure of development talk in which there is a population unable to participate and benefit of something—in this case, 1.7 billion people in the world (mostly women in charge of household economies) unable to participate in the global banking system—, a couple of sentences later the order of subjects and reasons has already shifted. The Alliance states on its website that "Cash-based transactions are also typically unsafe, expensive, inconvenient, inefficient, and lack transparency for governments, companies, and citizens alike" (my

[123] I have discussed briefly informality in the Introduction of the dissertation, and I discuss the categories of formal and informal in Chapter 5.

[124] As money gets digitized and this digitization is designed in different ways (whether is run by mobile network operators or banks and in different places, with different regulations and so on), the boundaries of what constitutes the business of a bank or a network operator change too, along with what constitutes money and what communication (See chapter 1).

underlining). Cash-based transactions are unsafe, expensive, inconvenient, inefficient and lack transparency most of all, for governments and companies, which deal with cash's supply chain hassles, cover its costs (and bear most of the risks) of its transportation and provision; *citizens* (not the poor or the women) are only mentioned at the end of that statement.

The Alliance's explanation continues by listing the benefits of digital payments over cash for "everyone in the [formal] economy" and starts by the benefit of acceleration that their strategies focus on: "Cost savings through increased efficiency and speed." Financial inclusion occupies the third place on BTCA's list, after "transparency and security" and before "women's economic empowerment". The supposedly excluded women on the picture that frame this narrative and who are invoked on the first lines of this BTCA's text end up addressed only at the end of the list of cash digitization's benefits, making it less and less apparent that this initiative is conceived around their needs. Cost savings, benefit number one in the list, describes that "Governments, companies, and international organizations and individuals waste time and resources making and receiving inefficient cash payments." In contrast, "digital payments can be made quickly and efficiently, which decreases overall costs."

The actual problem for them is, thus, cash. The banks have a problem with cash: if a population needs and uses cash, it implies that banks (private and state run) need to supply it to local vendors. Cash needs to be produced and held somewhere safe, needs to be counted and validated, it requires processing, transportation, and protection and therefore, it is costly, and it decelerates finances. Cash, in the eyes of bankers and of the members of the BTCA alliance which includes partners such as Visa and Mastercard, must appear to be like rust and gunk clogging up the financial pipes, inhibiting the rapid stream of digital finances from pouring through.[125]

[125] I thank Kristi Onzik for the visual images on this.

Also, cash cannot be tracked down, and in that sense, it lacks transparency for governments and companies that are not invited to mediate its exchanges from hand to hand. That is why for the Alliance "transparency and security" are digital payments' second benefit after cost savings. While tracking money facilitates governments' taxation, the data it produces is also an asset for banks, another resource to extract and profit from.

Cash: a nation state-making technology

The language used in BTCA's website is interesting and not innocent. It is an effort—within an ecology of financial development practices moving in that same direction—attempting to re-signify cash from a democratizing and nation state-making technology into an outdated medium in need of replacement. It is not surprising, especially if, following STS money scholar Lana Swartz (2020), we think of technologies of money as technologies of communication. For one thing, money's materialities have run in parallel with technologies of communication: "print, telegraph, mainframe computer, information networks, mobile phones" (27). But also, as anthropologist of money Keith Hart reminds us, money is mostly a "cultural infrastructure that allows us to communicate" (2000, 17).

If money communicates as much as it functions as a means of value and transaction, then every technology of money imagines a community whose borders are delineated by the circulation of that currency or payment method. Technologies of money are political projects. Thinking with historian of money Finn Brunton (2019), every kind of money belongs to specific arrangements of knowledge and power and is "built on the promise of a future" (151). The prototyping of new

monies, while “it acts as a zone for modeling and performing a potential future”, it effectively “builds on the past, on what is available” (88). In other words, the ways its proponents imagine future communities serve as a “testimony of their present” (203). For instance, the future that Bitcoin imagines through the practices and communities that make it exist is not the same as the one imagined by paper-money, credit cards or Starbucks’ loyalty points—and neither is singular.

As Swartz states, “the history of payment bears traces of ongoing conflict: between space and time, ephemerality and permanence, individual identity and collective accountability, private control and the public interest” (2020, 27).[126] National currency is a form of print media and, more broadly, paraphrasing Swartz, a form of mass media, a model of centralized communication that developed along nation-states. Anthropologists Keith Hart and Horacio Ortiz consider money (as state-issued currency) “the most powerful symbol” of nation states, while also acknowledging that societies have “long been leaking across its boundaries” (2014). This ‘leaking’ is partly driven by the re-privatization of money, as it increasingly circulates digitally through corporate pipelines.

It is not just that state-issued currency is flowing more through privatized infrastructure in digital form; we are also witnessing a time in which money is rapidly multiplying—through cryptocurrencies, blockchain, loyalty points, and social media currencies—thanks to digital technologies. If "state-issued currency created a 'common economic language' for citizens of the nation-state” (Swartz 2020, 173), the future being shaped by these evolving ecologies of money practices—that track along the communication technologies of contemporary times—is neither unitary nor has the nation as its organizing principle.

If cash is a powerful symbol and organizer of practices that delimit the nation-state borders, it makes sense that financial corporations would place it at the center of reimagining the transactional

[126] As Swartz states: “The repeating themes in the history of money technology are communicative, circulatory, as are its politics.” 27

communities of the future. By dematerializing cash, these corporations, partnering with governments, aim at retracing the communities that it makes. The promise is that governments will benefit from easier tracking and tax collection, *while also extending* 'financial inclusion' to its more disadvantaged populations.

However, during fieldwork, a Central Bank official who preferred to remain anonymous, and who was directly in charge of monitoring digital payments and e-money in the country, told me that so far nothing about money that has been invented yet is better than cash. One afternoon over coffee, he told me that "cash is transparent for its user." He explained that from the perspective of an individual and of small businesses owners (*bodegas*, *farmacias*)—the cash economies that BTCA and Modelo Peru are seeking to transform—nothing is better than cash.

Despite its slower pace compared with digital transactions, cash does not have any hidden transactional costs, its value is exact and written in its paper form. Digital payments (either in the form of mobile phones, cards, or online) almost always have some additional costs added to each transaction (the cost of transportation and managing the transactions through the 'rails' of banks, credit cards companies, etc.) which make digital services more expensive than cash.[127] There is no extra costs for individuals that only use cash and do not store it in banks, but there are costs and logistical issues in supplying it to its entire chain. The issue seems to be that while cash is transparent for its user, it is opaque for banks and the government (it does not leave traces behind to control it, tax it, and profit from it).

[127] Banks and credit card companies collect different fees: interest fees, annual fees, late fees. fees collected from merchants who accept card payments. When a retailer accepts a credit card payment, a percentage of the sale goes to the card's issuing bank. This is commonly referred to as the interchange rate. Credit card companies also earn money from assessment fees, which are assessed for processing a merchant's credit card transactions. These are different from the interchange fees previously mentioned. On: https://www.valuepenguin.com/how-do-credit-card-companies-make-money last accessed 10/21/2020

In my interactions with this central banker and in interviews with state officials working in the Superintendency of Banking and Insurance (SBS), it became clear that their collaborations with the banks were not innocent either. They were not as altruistic or solely focused on ideals like inclusion and cashless societies, as often portrayed in the kinds of materials produced by their alliances, like the BTCA. By working closely with the banks, they were also learning about trends and potential threats to national regulatory frameworks, interests, and procedures –not without also acknowledging the layered accesses they had to the endeavors of banks and other financial entities, such as tech startups, and e-money issuers. For example, while Bim was developed very publicly and in close coordination with the regulators, the banks were simultaneously creating their own mobile payments Apps, like Yape and Plin, behind closed doors.

Moreover, most of the regulators were economists, but they reflected on how they were increasingly hiring engineers, as the rapid and continuous changes in the financial landscape required skills and practices they were unfamiliar with. How could they assess, propose legislation, and surveil these entities if they lacked expertise on the new languages, codes, modes of operating, global trends?[128]

The pace of the state, much like the pace of its primary monetary technology (cash), was slow to meet the demands and speed of contemporary financial transformations. Thus, even though in the case of the BTCA discourse, some practices suggest that the interests of governments and banks align, I suggest that the push for the digitization of paper money also illustrates 'major key'

[128] A central banker shared his remarks on how he saw the future of social media money when we were discussing the Facebook Libra money project and U.S. Congress hearings: "While we think we can control it and regulate for A, B and C, there is a lot we cannot see. The companies are doing D, E, and til Z." Also during a Digital payments conference in Lima 2017, I listened to the presentation and Q&A with a US Federal Reserve Bank regulator. He mentioned their lay back approach, or wait and see, as it is unclear with these 'money disruptions' what will remain and what will become a standard in need of regulation.

tensions (D'Avella 2019) between national identities and practices that patrol its monetary borders on one hand, and global circulation, and the power of corporations over governments on the other.

The central banker's insights about the transparency of cash for its users were echoed by others in the field. For instance, the *bodegueros* (small shop keepers and owners) I visited with the Bim advisors (see Chapter 5) often remarked that they preferred to be paid in cash. When payments were made digitally through banks and intermediary point-of-sale devices (POS), transaction fees were always deducted. These fees were far from transparent but also often unclear and hard to predict, which dramatically reduced the margins of their subsistence businesses. In these mostly subsistence operations, where clients typically spend very small amounts in each visit (between one and five US dollars in average, according to my field observations), cash remains transparent because it allows users to know exactly how much they will receive.

Thus, just as it takes effort to sustain the representation of women as the most empowered by mobile money in relation to other excluded groups (i.e., the indigenous, the men formatted as poor), it takes deliberate effort (through calculations, conceptualizations, and strategic planning) to render cash less transparent and costly for these users, and to present and prioritize the need for capital storage as the most pressing need of people over the need for capital generation and of stable jobs. This re-signification of things, I argue, is the work of development as financial inclusion.

Socializing costs, centralizing profit

What type of narrative devices do BTCA, Modelo Peru and the likes need to radically transform the somewhat achieved promise of cash—as a symbol of a nation, as a shared economic

language that treats each of its beholders as equals, and as a transparent and democratic means of exchange—into a problem?

As I mentioned in the introduction of the chapter, anthropologist of money Bill Maurer identified four not mutually exclusive narratives that professionals of "the networked assemblage calling mobile money into being" were telling each other while "seeking to understand, shape, and profit from the payments space" (2012: 595). These narratives captured different aspects and cast different characters of this new payments space. One is “the empowerment story” mostly about the rural unbanked of a developing country with relatives in the city or abroad and with goods or trade and cash, with access to mobile phone or a communications network but not to financial services. This is the narrative that my work centers in as it powers the drive for financial inclusion and connects with the practices I am describing in this chapter. A central device of this narrative, as Maurer explains, is the concept of ‘transaction costs’ that individuals allegedly bear when using cash.

Transaction costs is a notion that results from calculating the expenses that the poor may incur in transporting cash, paying fees to a courier, and risking theft. This concept emerged in earlier rounds of knowledge production around mobile money in which the telecommunication industry featured prominently (instead of banks) along with international development, economists, venture capitalists, IT professionals, microfinance practitioners and so on. This narrative was widely accepted among this group of experts and their practices when banks, like the ones in Peru, started experimenting with mobile money. With these calculations, as Maurer explains, mobile money proponents were “able to make a more compelling case” for their product, while at the same time they were constructing “the imagined user of their service as at the mercy of expensive and risky cash transactions, and in need of a cheaper and more secure alternative" (2012: 598). Thus, in the empowerment story, "mobile money can be 'transformative' if it helps people reduce the 'transaction costs' associated with cash and coin" (597).

Rather than an economic truth, as Maurer describes, the concept of ‘transaction costs’ is a ‘market device’ key in formatting the mobile money payments space but also the imagined client for it (2012: 597). "Market device," a concept drawn from Actor-Network Theory (or ANT), refers to “the coordination of various heterogeneous qualitative, technical, mathematical, informational and other elements that, albeit not seamlessly, turn a set of phenomena and practices into something 'economic' (Muniesa et al., 2007)” (Op.cit.: 598). This market device feeds a story which gives shape to a market. The creation of a market requires the creation of a market segment (imagined individual profiles that in aggregate become a population). For that to happen, “people have to first be made into 'the poor' or 'the unbanked,' among whose chief problems in life is their lack of access to financial services” which leaves them with the burden of the high 'transaction costs' of their everyday monetary activities (597).

In other words, the empowerment story and its resulting potential market works first by creating populations as disempowered. When the banks come into the picture of mobile money, this story is already established within these assemblages of experts and their ecology of practices. So, their narrative, to which the Better than Cash Alliance’s texts explored here are exemplary, takes ‘transaction costs’ as a truth. Transactions costs are taken for granted and, I suggest, serve as an already established point of departure to focus on figuring out how to *include the banks and their needs* in this narrative. Particularly, it seems that they are trying to figure out how to socialize their costs in handling cash with ‘the poor.’

Cash, which is not present in most financial inclusion depictions of its supposed beneficiaries, is at the center of the Better than Cash Alliance and Modelo Peru’s modeling practices which are reimagining money and ways to profit from its handling and transportation. It seems that the new product-concept-outcome that the digitization of money introduces according to the BTCA is that all individuals pay for the cost of money transportation and handling—including the poor.

Mobile money is an entry point for banks to expand their financial market while at the same time and importantly, they are socializing their costs.

The costs need to be socialized so the profit can be centralized. Profit is the most expected benefit from this digital financial development package, and it is kind of fascinating that the Alliance does not mention it even once in its website; it has to be deduced from the cost savings benefit. If instead of cash, people would use a cellphone (a technology that they have access to and they are already familiar with) to send and receive payments, their money could feed the formal financial system and their transactions could be tracked.

The cellphone is the ubiquitous technology that can displace cash with digital payments and connect (literally!) the poor (represented by but not limited to the women), with formal banking. According to this narrative, by including their money in the financial system, people would move from 'excluded' to 'included' and particularly the women, constructed first as the most excluded among the excluded, will be empowered by it. This is, of course, in the world of practices engaged in modeling and formatting populations (see Chapter 1 also). In practice, it is convenient to represent women as the most in need because they are also merchants, and many, are also heads of households; so they manage cash (see Chapter 2 and especially chapter 5 on this). Returning to this narrative, once included, the payments, investments, and savings of 'the poor' will all be digitally stored and transported through the banks' infrastructure, that is 'formally.' Simultaneously, their transactions will create profits for the banks in multiple ways: more money to lend, more fees to collect, and more data to mine, sell and generate new business models. Additionally, as 'the poor' make payments, they also facilitate the state's surveillance work in tracking, estimating, and taxing their transactions, as well as in distributing welfare money.

It may have seemed back in 2014, when Modelo Peru was conceived, that financial inclusion was the leading force pushing these initiatives, but it is becoming clearer in this second decade of the

twenty first century, that the digitization of cash is the one setting the pace now –if not always. The women and the poor may have been the receiving subjects of the policies and interventions of financial inclusion initiatives, and from that perspective, it could be said that their wellbeing was at the center of BTCA's work and that of Modelo Perú. However, if we shift perspective to the digitization of cash drive, the women and the poor easily shift position too, from beneficiaries to sites of experimentation and extraction for financial expansion. These institutions, including the BTCA and the partnership of banks named Modelo Perú, are helping them (as a way of helping themselves). As Carolina told me at the beginning of 2020, *ahora todo* es *digital, digital, digital y solo digital lo que importa* (today all is digital, digital, digital, and digital only, it's all that matters).[129]

In my research the resources extracted are not just cash; what also gets digitally mined is the women's representation which is a valuable asset in itself to generate capital elsewhere—as support to the modeling of financial expansion as inclusion.[130] As representations, women stand in the picture instead of cash, as if they were the ones in need of improvement (and empowerment) when what needs to be transformed according to this sociotechnical assemblage is actually the materiality of cash. The women are a proxy for the population they are imagining (the poor) as a proxy for the actual community they expect to access through mobile money (that of people transacting in paper money). As they imagine this new technology of inclusion, they reproduce racialized habits of thought (De la Cadena 2005 & 2008; Trouillot 1995) that in turn, and inevitably, create a differentiated transactional community for this population than the one for those already banked—who are not imagined as 'rural,' 'indigenous,' 'women.'

[129] See also Chapter 2. Personal conversation with Carolina, January 24th, 2020 via WhatsApp call.
[130] For the future: Ananya Roy and development as a commodity and its commodity chains.

The poor as a cash 'hoarder' population and mobile money as the treatment for their 'disease'

Populations are representations that, depending on the practice followed (whether marketing or development in this case), can be thought of as market segments or problems. As such, they could be offered products or solutions (and treatments). The emphasis in the section above has been in the design of 'the poor' as a population part of market-making practices and here I am switching to the lenses of development and population problem-solving.

International development and its alliances operate by creating problems that need to be solved with goals and metrics to be attained and mostly attuned to the agenda of the proponents and not of the supposedly beneficiaries (Rist 2011). Those problems are defined in terms of population targets. For instance, digitization accelerates finances by bringing liquidity to the formal financial system when needed (i.e., any of its crises and bubbles) and bankers need to find where there is more cash that could be dominated ('the poor'). Thus, because cash is a problem for the banks, they create the poor as 'the problem of cash'. The promise of mobile money for banks and organizations like the Better than Cash Alliance is then that it will help them deal with what they consider the 'problem of cash' and that is *operationalized* by designing populations in need of their improvement projects.

A population framed as poor is a problem of national scale, or organic to the nation. The state needs to address the supposed need of the poor for mobile money to solve their supposed problem of lack of access to financial services, in the belief that this course of action will make them less poor and in turn, yield benefits at the national scale contributing to economic growth. This population is also cross listed as 'informal' further justifying the state and development institutions' scrutiny of their economic arrangements, especifically ways of storing money and saving for the future.[131]

[131] I discuss informality and formality in Chapter 5

It is not particularly remarkable that old and new actors (such as banks, telecoms and startups) are attempting to capitalize on the resources of 'the poor.' After all, the success of people like Hernando De Soto (2000), rather than proposing formalization, laid in "discovering" the enormous number of resources that the poor deploy to survive and try to "progress" which could be monetized.[132] De Soto claimed that the difference between the wealthy and the poor (and 'the West and the Rest') was one of appropriate representation of capital; the poor had assets but needed to make them readable or visible within the 'formal' or dominantly established system of financial signs.[133] His focus was on house and property titles that then can be used as collateral with banks.

Anthropologists such as Deborah James (2012) have provided several examples in which this course of action, a bit further down the financial road, has proven to lead to massive expropriation of titles by lending institutions and generalized indebtedness of the people. James examined how, South Africans after formalizing their house titles (transitioning from 'poor' to 'entrepreneurial' homeowners), took loans that the banks offered to make improvements in their now-visible assets to enhance their economic value. These loans, secured by using their property as collateral, were often too big tough, leading to many people defaulting on mortgages and consequently losing their original assets. In my research, I follow poverty experts and their industry partners' interest not on resources like property or cattle that could be monetized, but on the money itself that the poor possess and are not sharing with the market because it is in cash form held somewhere else than in a bank.

Instead of considering keeping and transacting in cash a rational economic choice of 'the poor' or 'the unbanked' and part of other social arrangements of 'keeping-while-giving' non mediated by banks, in this ecology of financial development practices, keeping money in paper form and away from banks is considered economically irrational and as selfish 'hoarding' (Peebles 2014).

[132] I thank sociologist Eduardo Ballón for his comments on De Soto.
[133] I discuss De Soto's ideas on formalization of the poor in the dissertation's introduction. See also Peebles 2014.

So, the solution proposed by BTCA and Modelo Peru is to include them in what will make the nation less poor via their financialization (bringing their cash into the banking system in digital form). Thus, the poor, according to these experts, need now to make visible or readable to the market this other asset (cash), besides other their 'informal' properties. It is debatable that the financialization of the poor makes the problem population less poor even as it may increase the wealth of others, even that of the nation that does not necessarily include them in other ways such as better health services, education, and so on (see Roy 2010; James 2012; Murphy 2013; Kar 2018). Nevertheless, in what follows, I attempt to examine the development logics that accompanies the narrative of transaction costs.

Digital-financial-development assemblages and the fight to accelerate access to cash

In chapter 2, I examined how through social development practices poverty gets conceived as a disease in need of treatment. Now what needs to be intervened is cash. In the field, experts often quoted statistics to express their concern, delimitate the problem to intervene and justify their selected course of action. One such group of numbers used to portray Peru in the mid-2010s and specially before the Covid 19 pandemic, was that about 70% of transactions were done in cash, and only 30% of the population had bank accounts.[134]

People in Peru's rural towns are familiar with these development narratives and practices in which there is a fight that needs to be won against an issue framed as a poison or disease preventing progress and a healthier society—whether these enemies are coca crops, illiteracy, children's anemia, or cash—though it is unclear if is the same type of fight. Is cash considered yet another disease in need of treatment, or one of poverty's symptoms, by these experts?

[134] These were numbers repeated on the field by PDP experts and state regulators alike.

Before addressing that question, I want to illustrate to the reader the pervasive influence of development work in this country, and how deeply embedded development institutions and their practices have become in people's everyday experiences. Peru, as a 'developing country' has a long history of development experiments and has all the infrastructures and knowledge networks in place for measuring, counting and intervening (Li 2007, Roy 2010, Escobar 2011). For instance, Lima, the capital city of the country, was at least up to 2019 when I did my last fieldwork visit, the host of the headquarters of the World Bank and the International Finance Corporation for the Andean Region. Another number may be more illustrative, though. According to the Agencia Peruana de Cooperación Internacional – APCI, a governmental agency that monitors international cooperation, they were 1,889 NGOs registered in the country in June 2024, but they may be even more that are not registered in this office's records.[135] Peru is geopolitically divided into regions, provinces and districts, and in total it has 1890, very close to the NGO number. This comparison is not to suggest that there are registered NGOs in every of its districts, or that they are evenly distributed, or even that they are all similar. Organizations vary widely in size and scope, from more grassroots, to more research-oriented and to more corporate-like.

However, I hope it helps to convey the capillarity of development work, its reach in this country, and the familiar place these entities occupy in people's lives. A more personal example might also be helpful: my father, like many of the parents of friends I grew up with, worked for NGOs. In the early 1990s, he was part of the initial experiments in lending to farmers and peasants, which later became known as microfinance. I grew up in this context and studied as an undergraduate in Lima a major called 'Communication for Development,' inspired by the idea of helping the disadvantaged (a top-down idea which I later problematized). This career option reflects also the

[135] https://cdn.www.gob.pe/uploads/document/file/2230603/2192060-apci-directorio-ongd-30-06-2024.pdf?v=1719942828 (last accessed 08/02/2024).

professionalization of the field of development and the more institutionalized ways of producing its authoritative knowledge and practices in the 2000s, a phenomenon not unique to Peru.[136] These personal anecdotes also reflect how deeply NGOs permeate the lives of people in the country – though in differentiated ways, some as implementers and some as 'beneficiaries.' Development was a growing sector in the early twenty-first century, diversifying with the advent of new technologies. For example, the financial services sector expanded alongside telecommunication (internet access and services, phones). My personal trajectory is marked by that expansion: I first worked professionally in social development projects fostering access and services via telecommunication infrastructures and internet to rural districts and towns before becoming a scholar of financial inclusion and the financialization of development.

Borrowing from anthropologist of microfinance Lamia Karim (2011), NGOs operate as a sort of "shadow state" intervening in places that often the state cannot reach on its own, signaling "the privatization of state functions in many areas" (2011, xviii). In the case of the digitization of cash, NGOs provide the infrastructures for intervention and operationalize the 'evidence' of a 'problem' (let's call it cash 'pandemic') that comes from higher mandates (state or international cooperation) into local codes, manufacturing in practice "a culturally specific governmentality" (Ibid.). Besides the usual development actors (NGOs, international organizations, the State, other non-profit institutions), when it comes to cash, new entities were also pursuing this fight: banks, telecom companies, fintech corporations and many for-profit institutions such Jeffrey's own consultancy company which stated on his website home page that his firm "exists for one clear purpose: *to help the world win the fight against cash*" (my italics).

[136] Lamia Karim discusses in her book Microfinance and its discontents (2011) the expansion of the NGO sector to financial services, telecommunications, internet services, and so on, and how it is a professional option for many in Bangladesh (see Chapter 3).

This digital-financial-development assemblage (see Schwittay 2011) also employed new methodologies, such as randomized controlled trials and, in the case that I am studying, the shorter versions like pilots when the project is originates not in an NGO but in a business-tied-to-development, as discussed in the previous chapter. All these actors agreed that cash needs to be digitized—this is the urgent direction the world must take. However, the emphasis of its many brokers varies according to the particular agendas and proximity to the field in which these ideas are implemented. For instance, Jeffrey (the international consultant introduced in the previous chapter) framed it more enthusiastically on his consultancy company website as a *fight* to defeat cash. Meanwhile the Better than Cash Alliance, writing policies and strategies in New York City and Washington D.C., emphasized *acceleration* in the transition from cash to digital payments in poor countries, and the World Bank focused on *access* through its "2020 Universal Financial Access" (UFA) goal.[137] In Peru, government officials and the first manager of Modelo Perú, who came from the NGO-research sector, spoke of financial inclusion. In other words, as these ideas travel from the Lima offices in which they are discussed to other centers of knowledge production and dissemination, the women in the picture gradually fade into the background, while the digitization of cash takes center stage (or the close-up shot).

Despite these nuances, the cash that the poor possess or could possess is unequivocally the new target for this network; the *it* that makes the unit, the interest in common that is not the same interest –or perhaps it is. The elimination of cash, however, doesn't work as the elimination of say illiteracy, anemia or coca crops which are respectively replaced with an acquired ability (literacy), an improvement in overall health, and 'alternative' crops (cacao or coffee). In the fight against cash and in all the talk of this digital-financial-development assemblage about moving forward to a cashless

[137] The World Bank, Universal Financial Access 2020 in: https://ufa.worldbank.org/en/ufa (last accessed on 01/19/2024).

world, money remains money; it does not become something else entirely or its opposite (like in the anemic/unhealthy vs healthy body example). The assemblage's interventions target its materiality, because in changing cash from paper to digital token, what gets transformed is the medium in which money's nominal value travels and, more importantly, who gets to transport it, control it, and profit off it (See Maurer 2012 and 2015).

To put it differently, when development discussions and projects orbit around 'universal health care,' it is easier to see how universal access to health care could benefit people. But what does 'universal financial access' even mean? Who is the subject in need of that access? Are the billions of unbanked in desperate need of bank accounts or is it the banks that need access to their money? Anthropologist of money Gustav Peebles, with a touch of irony, remarks that for the development community at large and the private-public alliances dedicated to accelerating the transition from cash to digital payments in countries and populations categorized as poor, the unbanked appear to be "the hopeless billions who stand outside the formal financial sector and therefore cannot contribute to the capitalist growth that could considerably alleviate their own poverty" (2014, 595). As this chapter has shown, and playing on these organizations' word-choices, it seems more like *a fight to accelerate access* to the money of the poor—a fight primarily among entities that seek to control it and profit from it.

For cash is not a disease; it is an obstacle, as Jeffrey's website puts it, cash is *the biggest obstacle to digitization & financial inclusion*. You treat an obstacle differently than you treat a disease; you remove cash from the everyday local economies of 'the poor,' but you do not eliminate it because you may also need it. I am thinking, for instance, in some of the bankers of the Modelo Peru partnership and the suitcases full of cash that they delivered to different Peruvian politicians running for President in 2011 and 2016, while at the same time they were conceiving Modelo Perú and building Bim and promoting financial inclusion and digitization among their clients and the

unbanked, and I will return to this in detail at the end of this chapter (see also Chapter 5). Sometimes you profit from digitizing cash and sometimes you need cash to make a profit. This new fight wants, therefore, to remove and subdue rather than eradicate cash (or to limit the authorized users of it), and the women in the picture are necessary for all these narratives, they are part of the process of creating, from the problem of cash, the problem of a population.

The problem of cash gets confronted with the 'problem with banks'

A recurring comment of PDP engineers and government regulators alike during my fieldwork was that most Peruvians have a *problem with banks*: they simply do not trust them.[138] This is a common problem in many other places as well, and which surfaces when new infrastructures of money are being set in place like, in this case, mobile money. People distrust banks for many reasons, "not only because they lack understanding, feel that banks serve only the wealthy, or are uncomfortable approaching a bank for services", as if often argued by banks and financial literacy interventions, but "they also, quite rationally, distrust banks because banks – and state-issued currencies – fail" (Maurer 2010, 20). In countries where political and economic instability is a recurrent situation, state-backed currencies' value may vary radically from one day to another; and savings in banks may be lost; so often "people's monetary repertoires include practices meant to hedge against such institutional failures" (Ibid.).

Anthropologist of finance and infrastructure Nicholas D'Avella extensively documents this situation in the case of Buenos Aires' post-2001 crisis. He focuses on how this crisis impacted the

[138] Personal conversations with PDP engineers, and Peruvian regulators (Central Bank and Bank Superintendency) during fieldwork in Lima. I also observed this firsthand on the days I used to accompany Bim promoters to advertise this service to small shop owners in low-income areas of Lima (2017-2019).

real estate market, and the ecology of investment practices and politics of value that emerged as a result. His research highlights how distrust on banks "installed during the crisis," led many to view buildings as a long-term "more solid way to save their savings" than bank accounts (2019: 25). As he recounts, by March 2001, large amounts of capital had already exited the banking system "as people began to doubt the solvency of the Argentine state" (47). The first and most effective to move their money abroad were large companies and wealthy individuals, creating what later be called a "highway" of money leaving Argentina (Ibid.). In November, "to prevent a full-scale run on banks, the government instituted strict limits on the withdrawal of bank deposits," a policy commonly dubbed as *el corralito* (the little corral). In practice, "the infrastructures that allowed for smooth conversion between digital and paper currency" such as bank offices and ATMs, points of cash-in and out for cash and digital, "had ground to a halt" for small savers and lay people, while wealthier and more powerful investors managed to move their funds to offshore safe havens (48).

D'Avella emphasizes that collective stories and memory, including the mistrust of banks, are economic resources that Argentinians mobilize to understand their present, and plan for the future. Similarly, in Peru, there is a collective memory of past economic crises that reinforce mistrust in banks and governments. Specific events such as the 'Fujishock' of the 1990s and the 'Paquetazos' [large packages] of the late 1980s, though beyond the scope of my research, are notable instances where the government devalued the national currency.[139] In these moments of systemic failure, it was ordinary people, not bankers or large corporations and investors, who suffered the most with financial losses.

[139] Some of these events happened towards the end of the first government of Alan Garcia (1985-1990), who was reluctant to pay the national debt and reflect those international tensions. The shock represents the beginning of the structural adjustment neoliberal reforms implemented by Alberto Fujimori, once he took office in early 1990s, aimed at integrating the Peruvian economy into the dominant market model.

Also, at another level, perhaps more ordinary, there is the experience of debt, lived or recounted by friends and relatives. I learned about this in detail through an opportunity I had to listen to many self-identified indigenous and native women, not only from Perú but from continental America (from South America to Canada), in an international congress I was invited to speak on about critical perspectives of financial inclusion in 2022.[140] Women mentioned that one big issue with regards to debt is that banks and other financial institutions offer credit without explaining the conditions of payment, "las letritas chiquitas" (the small-font letters of contracts) which end up with people defaulting and ending more impoverished than when they first accepted the loans offered to them. Many expressed that the worst that can happen to you is to be indebted. One of them said it very clearly: "la deuda es la mismísima muerte" (debt is death itself).[141]

Moreover, in Peru, there is a common understanding that money in a bank account cannot be mobilized like money in your hand; it simply does not make the same relations.[142] And cash can make these relations even without being present. In Peruvian Andes' communities, where the women from the picture of the test live, there are many transactions that are monetary and occur even if there is no cash exchanged between hands. The informants of another anthropologist who worked on Peru, Marisol de la Cadena, exchanged rams for onions and school supplies in the local market.[143] The equivalence between these goods was calculated in monetary value, as if cash was present, even though there was no cash exchanged from hand to hand at any point in the transaction. Cash,

[140] I presented a talk named "Inclusión financiera: ¿Democratización de las finanzas o bancarización?" in the Encuentro Continental de Mujeres Indígenas de las Américas (ECMIA). Generando Propuestas de Justicia Económica. Ciudad La Antigua (virtual), March 24 – 26, 2022

[141] Similar experiences have been documented in ethnographies on microfinance in other regions, such as in India (Kar 2018) and Bangladesh (Karim 2011).

[142] On how money makes different relations and is earmarked for specific functions, see Viviana A. Zelizer, *The Social meaning of Money: Pin Money, Paychecks, Poor Relief, & Other Currencies* (New Jersey, Princeton University Press, 2017). On money repertoires see Guyer 2004.

[143] Nazario is her interlocutor, co-laborer in her last book *Earth Beings: ecologies of practice across Andean worlds* (2015). Personal communication with Marisol De la Cadena, November 2020.

precisely because of the costs and logistics of transportation and handling, is a scarce resource in such towns.

Thus, it is not that cash material presence is indispensable, but it matters what relations cash makes. This example is a monetary transaction which includes amounts, weight, prices, quantity.[144] I have witnessed similar exchanges myself as well (also see Hart 2017).[145] Cash is not physically present, but it is otherwise; it is not a digital transaction either. Digital money does not mobilize the relations that need to be mobilized, or not yet, or not in the same way. Calling this transaction 'barter' can be misleading because it seems to suggest that there is no money involved, and it is.

Economists define money according to four functions it is said to perform: a medium of exchange, a standard of value, a means of payment, and a method of accounting. Despite these various dimensions, "all economic textbooks treat the first [i.e. a medium of exchange] as primary" (Graeber 2014, 22). Economists' attention is focused on the transaction encounter between buyers and sellers in which money acts as a medium of exchange (as a universal equivalent). However, in the Peruvian Andes transactions as the one described below abound, and which money works as a measure of value and unit of account, and this is not unique of Perú. For instance, Federico Neiburg studies the Haitian currency universe where there is a "generalized use of a currency, the Haitian dollar, without any material existence, past or present, as a coin or banknote" (2017, 270). He details that "in most transactions in Haiti (price negotiations in markets, working out wages and contracts), calculations are made in Haitian dollars, while payments are made in other currencies" such as US dollars and in gourdes, the national currency (Ibid.).

[144] For a discussion on money functions and immaterial money in a different specific case, see Neiburg, Federico, "An Imaginary Currency: The Haitian Dollar." *Money in a Human Economy*. 1st ed. Vol. 5. Berghahn Books, 2017, 270-272

[145] On monetary pluralism widespread in the world see Keith Hart 2017

Another example which challenges simplifications of complex economies into the economists' 'barter' narrative comes from David Sneath (2006) who studied monetized 'barter' among pastoralists in Mongolia during neoliberal reforms. He examines how "the dominant commercial transactional form at the time (…) was 'barter-trade', in which merchants took useful goods out to pastoral encampments and traded them directly for livestock or livestock products" (270). In this case, while "cash held limited appeal for people several days' ride from any place where you can purchase goods," the 'barter' transactions were still "monetised in the sense that the values of the items traded were calculated in terms of money prices and translated on the spot into goods, so that the difference could be made up using one of the various currencies in circulation (the main ones being silver, tea and sheep)" (271).

In my case, one could think that the presence of so-called 'barter' makes attractive the absence of cash –meaning as the perfect place to introduce mobile money and digital payments as Modelo Perú is proposing-. But it becomes less attractive if there is no trust in the relation that is through money but not cash (as mobile money/digital payments). It is the lack of trust in banks (and governments, and development projects and its promises too) that makes the preference for cash and that can be hard to overcome.[146] Put it differently, what Modelo Perú's bank partners were trying to circumvent through their collaboration was not yet a problem: people they think of as financially excluded do not think of themselves as financially excluded. They may need money (and even want development as access to consumerism), but they do not have a necessity for banks. The problem of

[146] Most Peruvians not only do not trust the banking system, but they also mistrust governments which can devaluate money from one day to another as has happened in the past (Alan García in 1987 and then Fujishock 1990). Also both are often involved in corruption scandals and the latter has been very unstable in the last decade. See "Perú se instala en la inestabilidad: 4 presidentes en los últimos 4 años", Open Democracy, 11/13/2020, https://www.opendemocracy.net/es/peru-instala-en-inestabilidad-4-presidentes-en-ultimos-4-años/ also "Francisco Sagasti se convierte en el nuevo presidente de Perú, el tercero en una semana" BBC Mundo, 11/16/2020, https://www.bbc.com/mundo/noticias-america-latina-54965252

cash and the problem of exclusion, I suggest, are problems of the designers of financial inclusion and of the digitization of cash.[147]

The bankers' fight of 'the poor as the problem of cash,' however, gets confronted by the 'problem with banks' that Peruvians have. Through the examples of monetary transactions in the Andes and from other places, we can see that what matters is what relations cash makes which are mobile and abstract though not digital–people do calculations, prices and payments with cash that is present even tough not physically–. But this is mobile money that is not *tracked* money, and banks fear this autonomy, they want to surveil it, control it, and then extract it.[148]

Authorized hoarders of cash

Drawing on the work of anthropologist Gustav Peebles, I suggest viewing the problem of cash as the problem of authorized hoarders. Peebles examines 'unbanking' in African countries and the portrayal of the poor as cash 'hoarders' to understand societal power structures. The fundamental question for him is, "Who is allowed and encouraged to hoard, while others are lambasted for doing the same thing for much the same reason?" (2014: 598). When a population is accused of hoarding resources, it implies that their behavior is considered economically irrational. However, he points out that there is plenty of evidence of the 'sociality of hoarding' and of people planning and saving for the future using mechanisms other than formal banking as the work of different Africanist Anthropologists show. Moreover, he describes how "capitalism actually relies intimately upon the fact that certain elements in its global infrastructure hoard dead [or unused] capital" (2014: 587). While "the powerless are the socially indicted hoarders" of cash in these international development

[147] This situation changed significantly during the COVID-19 pandemic, but that is yet to come.
[148] Joe Dumit, personal conversation, June 2021.

narratives, bankers are the "socially approved" keepers of "centralized hoards" of the same, but for this 'population' (if you will), the hoards are called 'reserves' (598).

Bankers also need their clients' money as savings, paraphrasing Peebles, to project it outwardly as credit money. As he explains, quoting 19th Century's John Stewart Mill's Principles of Political Economy: "the word saving does not imply that what is saved is not consumed, nor even necessarily that its consumption is deferred; but only that, if consumed immediately, it is not consumed by the person who saves it" (Mill 2004 [1848], 92–3 quoted on Peebles 2014, 598). It follows that "in Marx's terminology, savings are 'living capital', alienated from their owner, while a hoard is 'dead capital', unalienated from its owner" (Peebles 2014: 598). Seen in this way, the decision that individuals face is whether they will or not *rationally choose to alienate their capital* and give its control to a different institution than their own household, and under which conditions they may be more inclined (or forced) to do so. Banking or *unbanking* thus, as Peebles suggests, intimately relates to subject formation and to community boundaries and, in some cases, they are even a form of active resistance to some (extractive) projects. This connects back to my previous discussions on cash as a technology of the nation-state, and the democratizing value that cash has for its holders.

Against the 'spirit of technological determinism' infused to mobile money by its proponents, "whereby progress that a technology is supposed to cause is framed as natural and inevitable, thus overriding individual, social, institutional, or other kinds of agency" (Ames 2019, 10), we can see unbanking, paraphrasing Peebles, as a refusal to participate in that kind of future, and as an active investment in other kinds of futures. As banks and development practitioners work on 'formatting the poor' (Maurer 2012) to in turn format markets and solve problems to unleash economic growth, the people they are trying to fit in their categories are also engaged in their own calculations, choices, and formatting processes.

Modelo Perú reveals thus how financial inclusion has given way to an even more pressing financial goal: the digitization of cash, which is an interest in common of banks and governments, institutions that both carry the social and financial costs of moving it around—though not without tensions between them. As Ananya Roy puts it "what is at stake here is a crucial shift from the idea of development as social services and the improvement of human capital to development as integration into global financial markets" (2010, 47). Carolina said it clearly: *ahora todo* es *digital, digital, digital,* it's that what matters. Cash, which is rarely in the pictures, is at the center of these modeling practices which are reimagining money and ways to profit from its digital handling and transportation as well as facilitating its surveillance (both for banks and governments); and the poor and the women are the test sites for these practices, as they provide the narrative that justifies and moves forward this new goal.

Cliente A and Cliente B: credit, anonymity, and cash affordances

In this section, I offer a fieldwork vignette that further grounds the discussions presented so far throughout the chapter, contributing to the examination of authorized hoarders and the labeling of unbanked-ness as a problem requiring financial development intervention—but only for certain populations. The vignette reproduces a conversation with an engineer that I will call Fernando and that I frequently accompanied in the field. I consider this conversation a practical master class on banking and the affordances of credit and cash for differentiated types of clients.

This exchange took place online, from living room in Lima to living room in Davis, with the background of children playing on both sides, during the COVID-19 lockdown times after my on-site fieldwork had ended. In the field, Fernando and I developed a kind of nerdy friendship, centered around our mutual curiosity about technology and how it works. During 2020 and 2021, we often

exchanged messages through WhatsApp. I would share interesting articles or news on tech issues happening in the US and he would share some from Peru. We had a couple of longer Zoom conversations, like the one where the following extracts come from, and which was prompted because I wanted to have an update on Bim and on the digitization of cash in the country. This section also marks a fast forward to COVID-19 and post pandemic times in the remainder of the chapter.

As I one and again learned during fieldwork, when you follow money in Peru every road leads to BCP, the largest bank, in one way or another. The following conversation also illustrates one of those instances where BCP is an inevitable point of passage (Latour 2005).

Yape and Plin and Food for the monster

It is 2021, the largest bank in Peru, also the biggest investor in Bim, called BCP, has its own mobile payments App Yape which is fed permanently with lessons learned from Bim—as they operate in parallel. BCP's team of engineers, marketeers and managers assigned to this specific project (or 'channel' as these experts call Yape) have figured out a way to offer this service as separated from the bank's brand and without the need of a previous account with BCP. In simple, if you don't have a bank account with BCP or another bank, you just need to download the App on your smartphone and register with your national ID number and cash-in some money to the wallet through a bank or a correspondent bank agent. Another option to start having mobile money in your account is to receive it from someone else who is already a registered user, in the form of payments or remittances.

Yape is growing exponentially, partly due to the unexpected collaboration of COVID-19, which made cash a suspect of disease transmission.[149] Additionally, lockdowns complicated cash-based economies, making cash hard to access, and leading people to turn to digital money. Even banked people from other financial institutions banks are interested in using Yape.[150] In 2017, Yape introduced payments through QRs and that propelled its growth, particularly, in combination with the pandemics.

By 2021, the largest bank has Yape in addition to being a partner in Bim, and its largest investor (as Bim is supported by *aportes de capital* or equity contributions). Meanwhile, the other major banks developed yet another shared and interoperable system called Plin, which operates between banks via an app for smartphones and internet, rather than through telecommunication channels like SMS or USSD. This allows banked individuals from different banks to interact with each other. *Cajas municipales*, small saving banks which also participate in Bim, have been incorporated in Plin as well. Although BCP is not a direct partner in Plin, their App Yape can connect with it. The story of Plin and the relations it makes is the one I first discussed with Fernando.

BCP, Fernando explains, is subsidizing *las integraciones* for Plin to their app Yape. That is, if smaller banks like las cajas municipales want their clients to be able to transact with Yape, they can connect (or integrate) their systems from Plin to Yape/BCP for free. As Fernando commented:

> "Unintentionally (*sin querer queriendo*), small financial institutions are showing the big monster [BCP] the origin of their transactions. And that, on a financial

[149] I developed these ideas in a paper called *"Vectors for a Cashless World"* presented in the 4S Conference, Toronto 2021 (online).

[150] In 2017, Yape introduced payments through QRs and that propelled its growth. Para future La historia del vendedor de mandalas en la playa. Eloy el trapero Yapero y este articulo en donde lo mencionan sin nombre https://trome.com/emprende-trome/casos-de-exito/el-exito-de-yape-el-equipo-peruano-que-tocaba-puertas-y-ahora-tienen-13-millones-de-usuarios-imp-noticia/

> level, is like you are teaching the biggest monster how you feed yourself. So, what guarantees that it will not take your food (*alimento*) away from you later?"

I didn't quite understand what 'food' was a metaphor for. So, my ignorance prompted a great conversation, which started with the question he posed back to me: what is the business of banks?

My answer was that they need to control your money so they can lend it and invest it. "Correct, the business of banks is the difference between what comes in (savings) and what goes out (loans). This is the famous 'spread'" He says that term in English, refering to the bank net interest spread, or what he also called 'the exchange rate'. A financial institution pays depositors or account holders an interest rate in exchange for their deposits that then the bank will borrow from them to lend to other people. The bank receives an interest rate from loans given, using the money they are supposedly storing for its depositors. So, Fernando explains, that spread –the difference between the borrowing and lending interest rates of the bank—always must be positive for the business of banks to be such.

I confess that it was only when transcribing the recording of this conversation that I finally grasped this basic principle of banking, despite having been a banked person for most of my adult life and frequently engaging in the common complaints that you need to be very wealthy to actually earn anything from your deposits. Most of the time, the infinitesimal 'interest' is swallowed up by other fees (account maintenance, limits on withdrawals or transfers, etc.). Like many banked individuals, I mistakenly assumed that my money was simply sitting in the bank where I deposited it, available in its entirety whenever I needed it.

D'Avella's description of *el corralito* in Argentina (2019), detailed earlier, shows that this is not the case. If every small saver like me tried to withdraw their money at the same time, they would

be sorely disappointed because it wouldn't be possible. Worse yet, they would be even more frustrated in the likely scenario of the government supporting banks by freezing accounts if such an event occurred—where many savers simultaneously wanted to withdraw their money in paper form—much like what happened in Argentina. In fact, in Argentina, some banked people protested after *el corralito* by smashing ATMs, a "powerful, visceral testimony to the false equivalences and limited fungibility between cash and bank balance" (48). While money in paper form could be fully accessed if it was in the possession of its owners (whether stored in a jar, under the mattress, or buried in the backyard), banked digital money could not be—and it was even uncertain whether it was actually 'there' or where exactly it was.

Fernando continues his explanation, which I find fascinating. For a bank, lending to an unbanked person carries much more risk because there is no documented history of their banking behavior. As a result, banks often 'avoid the risk.' The transaction cost is not worth the risk for them. Alternatively, as it is common practice in banking as well, the higher the risk, the higher the return, so banks typically assign much higher credit rates to unbanked individuals, which might deter them from borrowing. How can this situation be fine-tuned?

This is where mobile money becomes extremely attractive to banks, as it promises to generate data from these previously unknown-to-the-bank users of digital money. Banks can learn from this data, mitigate their risks, and still protect themselves by offering relatively high credit rates. This kind of behavior has been extensively documented in the case of microfinance (see, for instance, Karim 2011 and Kar 2018). The untapped market of the unbanked offers thus significant lucrative potential for banks, where 'financial inclusion' is more about accommodating the less advantaged to better deals for the banks than adopting a democratizing approach to finances that benefits the populations it is supposed to serve.

This is also where Fernando's explanation connects back to Yape, Plin and BCP: If BCP gets connected (*integrado*) with all the clients of the small savings banks via these interfaces, it will start learning their behavior, for free (without needing to directly devise and deploy strategies for that purpose). The small saving banks have already done the Know Your Customer legal obligations with these clients and issued cards to them. The BCP is obtaining the transactional history of the clients of these smaller financial entities. BCP, as Fernando stresses, it is not only obtaining it, but the small savings banks are, *sin querer queriendo*, giving it to BCP. By integrating their systems, the small saving banks are going to continue to give BCP that information for free, risking its own food chain. In short, nothing is 'for free,' much less so in digital economies in which data is the most valued asset to conquer a market, in the long-term this may be very costly to them.

Credit -debt relations for client type A

Fernando compares this *negocio de la banca* (this bank sector business) with the business of BigTech, like Facebook and Google that make their profits mining on users' behaviors. "This is the same: customer behavior grounded in a monetization" (*el comportamiento del cliente aterrizado a una monetización*).

> "It is like saying: Hey, I am going to learn that Fernando transfers an amount of money to Mariel every month. Why does Fernando transfer that money to Mariel? Let's analyze: is it always the same amount? Is it a variable amount or a fixed amount? Could it be that Fernando is paying Mariel a loan? And what happens the month he doesn't? Does Fernando need a loan offer? And there it is. That's the crux of the matter (el quid del asunto)."

The crux is thus to establish a relationship of indebtedness. Generating debt and ensuring that clients are never done with their payments is one of the business of banks. As Fernando points out, it

is the business of banks *for certain types of clients*, "like you and me" –and the expected new clients from the unbanked group that mobile money is bringing closer to their digital pipelines.

Another example he uses is the famous re-hooking of credit o "el famoso crédito de reenganche," which he explains as he often does, by presenting a specific case to analyze together. This time, he explicitly chooses another large bank (BBVA) instead of BCP to create his example, in order to shift attention away from that specific bank. His gesture reminded me of the characters in Harry Potter's books who avoid saying the name of Lord Voldemort, out of fear of conjuring such a powerful 'monster.' He then extends the nickname he coined for BCP to large banks in general:

> **Fernando:** "let's say that I make a purchase with my credit card, for example, *so as not to mention the BCP, with BBVA*. It's a purchase of 8,000 soles [about 2,400 US dollars at that time], in installments, without interest, of an iPhone and a MacBook. The bank knows about the purchase. What will happen when I am halfway through the payment? The bank will remind me: 'hey, remember that you can buy in installments without interest, and here are the places where we can buy.' And also, messages such as 'Hey, just in case a new iPhone has come out and you can buy it in installments without interest'. Why? Because the bank is *recolocando* (repositioning), it is the famous credit *re-enganche*."
>
> **Mariel:** "so the purpose is that you never stop having a debt with them."
>
> **Fernando:** "correct."

For Fernando, the 'big monster,' a label which alternatively refers to one bank (BCP), or the group of largest banks operating in Peru, or even to *la banca* (the banking industry) in general, is deeply concerned about the issue of digital transformation.[151] Banks are terrified because, in the past, their competition was other banks. But by 2021 it has become absolutely clear to them that their real competition for the time being is BigTech, not, as they thought back in 2011 when they started Modelo Peru and Bim, the mobile network operators that they believed would drive a highly

[151] La banca es un monstruo enorme que tiene el terror de la transformación digital

disruptive digital transformation. These tech companies, it seems to me, are as enormous monsters as the banks themselves, and potentially even bigger.

He offers another example, which seems speculative to me, to further emphasize the point that this business--what he referred to, for the sake of thinking together, as oriented to 'clients type A'—lies in credit and debt and is closely tied to the anticipation of future expectations. For that, banks need to know about their clients, and the reader should know that in this example, Fernando switches between the 'I' that represents himself and the 'I' that represents Facebook offering something to him:

> "Imagine that Facebook has a button that says: 'click and I'll lend you one hundred soles [about 30 US Dollars] to advertise, and you'll pay me later.' But why do I want to advertise on Facebook? 'Look, it's very easy. With one hundred soles, I promise you that your product will be seen by millions of people. Don't pay me, use it first and pay me later. It's that simple.' Then people will be clicking like monkeys, doing it over and over, because they are on the adrenaline of wanting to sell more, to place more, to do more."

The point of the example seems to be that, in this way, Facebook could target a massive audience and start offering microloans in exchange for advertising. They would collect data and keep people hooked through microloans. The operating logics of Silicon Valley's economies of attention but, as Fernando mentioned earlier, grounded in a monetization. Facebook, in the example, would not only be mining on users' behaviors and the data they can produce about it and later sell to other people or use for their own advertising purposes. In this case, because customer behavior and economies of attention are "grounded in a monetization" as Fernando explained earlier, they would be also profiting directly from it.

Fernando continues to find new angles to expand on this explanation, now delving deeper into the time dimension of it. This time he wants to address type A clients' need for money in the

present to achieve a better future. He discusses himself in the third person as an abstraction of a 'client type A' for whom the business of banks revolves around lending money, to underscore his point:

> "When Fernando from the present needs to buy something, let's say a house that he cannot buy with the resources he has available today, only Fernando from the future can provide these resources to him. How does Fernando from the future provide them to him? Through debt. Fernando from the future assumes the responsibility of paying that debt so Fernando from the present can receive the money he needs now. Fernando from the future should be the most worried Fernando in the world because he says, 'OK, I have ten years left on my mortgage, I have three years left on my car, and I already have two young children who are going to go to school and then to college" [laughs at both ends of our Zoom connection follow this example].

For Fernando, the Fernando avatar has only two alternatives: "either he discovers an oil well or start mining bitcoins or something and becomes a multimillionaire, or he starts showing the banks that he is a good credit subject and that Fernando from the future is going to be responsible." He concludes that in that scenario, and under this client 'type A' population framework (*esquema de población*), the Fernando from the future needs to use financial services. He can't grow without them. He connects this example with another scenario which builds on the first one and is less hypothetical, about a business he and his extended family actually have. This is a scenario where the current decisions of Fernando from the present, and his good debt repayment behavior is transferred to the family "emprendimiento" (small venture).

> "The company was extremely young. The company of the future was not subject to credit, but we, the shareholders of the company, were. So, the shareholders had to take out personal loans to finance the space, purchases, and machinery needed."

He connects his example with Hernando De Soto's work *The Other Path* and the dilemma with capital. De Soto, as I mentioned earlier, argued that the poor had assets that needed to be made visible or 'readable' within the 'formal' or dominantly established financial system (see also the Dissertation's Introduction for a longer discussion on this). The other issue is that when there are no assets readable as collateral to back up business loans, it is people who end up financing their *emprendimientos*, much like in microfinance 'social collateral' frameworks (see Schuster 2015). The rate applied to the people who end up financing themselves their emprendimientos depends on how readable they are as subjects of credit. As Fernando shares with me, "luckily my family has a good line of credit, but not all Peruvians have that privilege."

The small venture example is about the family business of the present and of the future and the humans of the present and of the future who carry the debt on behalf of the business. However, Fernando stresses, this is not the only business of banks, or, more accurately, there is *another type of banca* (banking industry) *for a different type of client*.

Another banca for clients type B... and their need of anonymity

To understand this second type of banking business and its services for 'type B' clients, Fernando returns to his avatar in his line of thought. He suggests considering a scenario where his avatar becomes wealthy and transitions from being a 'type A' to a 'type B' client, representing a different population framework.

> **Fernando:** "Fernando of the future reached a point where he no longer needs credit services. He became not only a manager at Google, but the company pays him millions. He knows he moves a lot of money. So now he is worried about other things. His new set of preoccupations are death and taxes. What kind of taxes do I have to pay and how much do I have to pay out of money that I have in banks?

> So, what do I want to protect the most? That no one finds out about everything I can do. So that's when you take the money out of the country."
>
> **Mariel:** "That's when Fernando of the future with all his friends, like the Romero Paoletti [the family that owns BCP], move their savings to the Grand Cayman Islands, Bermudas, or Panama and Switzerland or other tax havens."
>
> **Fernando:** "Exactly. Why? Because they are now entering another level, another business where la banca offers them *a value that is not interest, but anonymity*."

I jokingly mentioned the family running BCP as an example of multimillionaires who would behave as Fernando describes in his scenario—concerned about taxation and death, and choosing to move their money out of the country to shield their wealth from government scrutiny—because our conversation was unfolding in a context in which the name of the President of BCP's board (the largest bank and key partner in Modelo Perú) and also Chairman of Credicorp's board (the country's largest financial holding company and parent company of BCP), was all over the local news. This coverage was due to revelations about his personal finances, including suitcases full of cash delivered to Presidential candidates and accounts in Panama, which I will discuss shortly.

Building on Fernando's examples, there is one type of banking business which is the most common, caters to both ordinary people and wealthier clients (but not the multimillionaires) and focuses on knowing their customers and their financial behavior to assess their creditworthiness (would they be trustable payers of debt?). There is another type of business, at the apex of la banca, where ultra rich clients are served, with an entirely different approach. In this case, the service is centered around protecting the anonymity and the confidentiality of the financial transactions of its exclusive members, even when these transactions are in digital form.

From whom is this type of banca protecting its elite members, including CEOs of Peruvian banks? From the control of governments, their regulatory frameworks, and tax regimes. In the case I am examining, this is the very same government with which banks collaborate to control, surveil,

profit from, and tax other populations—now including the previously overlooked constituencies of 'the poor.' Bankers who promote financial inclusion are themselves clients of this other type of banca, which serves as a haven for their worries about taxation, death, and proper transmission of generational wealth—including these sorts of secrets of the trade.

The democratized anonymity that cash provides to all holders, whether relatively wealthy or poor, poses a problem for the financial system. Cash makes no difference, and in that sense, it is transparent—as the central banker told me. It offers everyone anonymity without requiring them to be a 'big fish.' BTCA, Modelo Peru and similar initiatives in other regions argue that cash transactions are not transparent for everyone involved, but mostly they aren't for banks and the state, and therefore need to be intervened with the banked digitization of paper money via mobile phones. Information, turned into knowledge of the behavior of users, is power, and bankers understand this well: if they could only gain access to the transactional lives of these new constituencies, they could better cater to them as a new market for indebtedness. Digitization provides this access to their data, and as 'the poor' gradually transition from paper money to routinely relying on digital money, it strips them from the anonymity that cash affords (and the freedom to remain unknown), adding yet another layer of extractive dispossession (Durante, Kröger & Lafleur 2021; Svampa 2019; Crandall 2019).

The protection of anonymity and confidentiality as a banking service is reserved exclusively for the ultra-rich; it is a privilege within globalized financial systems, an exclusive right for elite members. 'Type B' clients shielded behind these financial walls, maintain the right to remain unknowable. These corporate banking arrangements stand in stark contrast to paper money, a technology of nation states and their imagined communities (Anderson 1983) of equals, a technology which succeeded in extending this anonymity right to everyone.

As Swartz reminds us, however, “historically, monetary plurality has been more often the norm than not” (152-153). Both historian Rebecca Spang (2015), who analyzes the finances of France during the years of the French Revolution, and sociologist Viviana Zelizer (2017), who examines the earmarking practices of women, families, and the welfare state in the early twentieth century in the United States, also highlight the coexistence of multiple forms of money at any given time. These monies are distributed according to social status and hierarchies, delimiting stratified transactional communities and tiered monetary systems.

In that sense, it could be said that the greatest achievement of paper money is that it can be used as an equalizer due to its widely accepted circulation, ubiquity and the anonymity it affords in certain circumstances and relations.[152] Sociologist and philosopher Georg Simmel, as Lana Swartz recalls, describes how in Europe “modern print currency allowed people to transact, to live as strangers, freed from the old bonds of long-term economic entanglement inherent in rural patriarchy and feudalism” (2019:28). Drawing on political scientist Eric Helleiner’s work, she adds that one of the achievements of state-issue paper money is that it unified classes “into an economic polity with a “common economic language,” whose members would, at least, do business with each other, engage in commerce if not always conversation” (29).

If development discourses and practices were truly focused on the people, then perhaps cash would not be a space of such forceful intervention. On the contrary, what my research illustrates is the amount of effort put into problematizing paper money by problematizing even more certain

[152] Though Viviana Zelizer reminds us that, contrary to the notion that "a dollar is a dollar," state currency money has qualitative dimensions that extend beyond its numerical value, and the contexts in which it is used matter as well. She argues that both the type of money and its ownership are significant in economic transactions, alongside the quantity involved. By focusing on small-scale counterparts of large-scale processes, she illustrates how differentiation, innovation, and contestation are integral to how people spend and save money in advanced capitalist economies. According to Zelizer, "earmarking lies at the heart of economic processes," highlighting that the way money is qualitatively categorized and used plays a crucial role in shaping economic behavior (2017:208).

populations who are often intervened for other reasons and now also because of their unbanked-ness.[153]

Futures for money: It matters what models we think models with

If we follow Swartz argument that "technologies of money track alongside the technologies of communication," and consider that every money is a political project because it imagines a community whose borders are delineated by the circulation of that currency, then we can understand the trends in which Peruvian bankers, their practices, and their mobile money systems are involved. Their projects emerge in the vicinity, in relation (sometimes emulating, sometimes reacting against), and as part of an ecology of banking / digital / information / inclusion practices. Even though they claim to be advancing financial development for the benefit of the most disadvantaged (in the form of financial inclusion), we can anticipate future scenarios where, following Escobar (2011), the well-being of people remains not at the center.

Mobile money as developed in Peru, emerged in relation with mobile money practices in other places, like Kenya's M-Pesa, and the networks of mobile network operators, banks, governments, cellphones, USSD and SMS channels, and so on that organized it as a sort of digital cash. In the initial M-Pesa model, mobile money was more akin to digital cash than to banked money because mobile phones, acting as digital wallets, function less like saving accounts and more like digital piggy banks (Maurer et. al. 2013). In this arrangement of things, money neither 'grows' by accruing interest nor diminishes through maintenance fees. It is more of a digital cash/piggy bank model particularly because, as in the original model that Modelo Peru replicated, every digital token is backed by 'real' yet still digital money in *cuentas custodia* or fiduciary accounts. This means that

[153] In Chapter 2, I discuss in detail Arturo Escobar's ideas on the problematization of poverty and development operating as a less than innocent discourse (2011).

if every mobile money user wished to withdraw their money simultaneously into paper form, they could do so—something that is not possible with the banking model, where most money is lent and thus 'not there' for the savers to access.

But the mobile money I am studying here also emerges in relation with other digital-financial and banking practices. Take, for instance, credit cards. Credit cards are the digital form of money where the dreams of a cashless world started in the first place, from the 1960s and on. Credit card infrastructural networks are organized using what is called an "open-loop architecture," which "enables endless variation and differentiation in the transactional identities of its users" while simultaneously "facilitating transactional communication across that difference" (Swartz 2020: 52). Although all cards are accepted, giving an appearance of inclusivity, exclusivity is maintained by how the system operates as a black box for its users, where distinctions in card types, status, credit lines, and similar factors are submerged—though sometimes those differences are also visibly imprinted in the cards themselves (e;g;, EBT cards, cash back cards, versus Platinum or Sapphire cards). According to Swartz, the digital realm organized by the credit card payments industry "is a system of social categorization and distinction, of membership and exclusion (…). Its open loop architecture enables communication among and across these hierarchies, all the while maintaining them" (75).

Now consider, for instance, how Peruvian banks have created Bim 'for the poor,' Plin for a group of banks, including both large and small institutions (where larger banks are learning about the 'food chains' of the smaller ones and may eventually end up 'eating' them), and Yape, which belongs to the largest bank and is unsurprisingly dominating this new market. Yape addresses (or recruits) both banked and unbanked while maintaining hierarchies among them. Bim follows the digital cash model of M-Pesa, but Plin and Yape originate from banking channels and are quickly reverting to banking as usual. For instance, in Figure 3.1, we see that by 2022, once Yape reached a

critical mass of users (and coordinated and deployed the necessary digital, material, and legal infrastructures), it began offering loans through its platform.



Figure 3.1 Ad that announces the launch of Yape loans shows on my Instagram stories on September 18, 2022. Source: @Yapeoficial

Bim, as a technology designed for the poor—who are seen as subjects of the state in need of inclusion into the market—imagines digital money as cash, at least initially. Plin and Yape, on the other hand, imagine their transactional communities as already subjects of the market though not all equal players. Yape and Plin are money technologies that originate from a different corporate banking culture, with its inherent client segregation and hierarchization systems and protocols, which mostly remain hidden from the client's view (like credit cards). Thus, while cash treats all payers as equals, mobile money modeled in the image and likeness of the credit card payments industry—

albeit through different infrastructural arrangements—continues to organize the world into "hierarchical transactional identities" (Swartz 2020: 75).

As Swartz observes, in anticipating possible futures, the more money tracks along current communication technologies emulating social media, the more it becomes a series of closed-loops and walled gardens. These are managed by highly unregulated corporations and are less subject to democratic governance (as paper money is—and to some extent, credit cards—still are), representing what she calls "Silicon Valley feudalism" (168-169). Her insights align with those of economist Thomas Piketty (2013), who analyzes the increasing financialization of capital, historicizing our time as one in which oligarchs have returned (if they ever left…).

21st century development: private-public alliances, technosolutionism, and BigTech philanthropy

I would like to connect this examination with the field of development, as these money technologies also emerge in relation to it. Arturo Escobar conceptualizes development as a discourse "characterized not by a unified object but by the formation of a vast number of objects and strategies; not by new knowledge but by the systemic inclusion of new objects under its domain" (45). Paper money is one of those objects included in the twenty-first century list, with populations serving as proxies—specifically, 'the poor,' now redefined as 'the unbanked'—and 'financial inclusion' as the strategy of their incorporation, deployed, in turn, through various technological solutions.

I suggest that development not only operates by including new objects under its domain and problematizing them (such as the materiality of cash as an obstacle to finances) but by accruing alliances with all sorts of entities. Historically, non-governmental organizations (NGOs) were the primary implementers of development in coordination with state actors. Development agendas were

largely driven by nation-state funding organized through international cooperation entities such as the World Bank, the United Nations, regional development banks, and the International Monetary Fund. Twenty-first century development, however, is increasingly governed and shaped by philanthropic foundations, many of which are spearheaded by technology industry leaders and their families (e.g., the Gates, the Bezos, the Zuckerberg).

While NGOs remain part of the development landscape, their role is increasingly shared with other entities such as banks, private-public alliances, and even all private companies' partnerships like Modelo Peru. As these networks change, their practices and cultures shift as well, becoming more corporate in nature, with innovation labs, experimental and venture approaches, and start-up structures.[154] The predominance of these models also highlights the residual role of nation-states in contemporary times—along with their technologies, like paper money, and along also with the strength they once had to create communities in the image and likeness of their ideals.[155]

During a visit in September 2022, Arturo Escobar gave an informal talk at UC Davis, where he workshopped ideas from his more recent work, shifting from development critique to civilizational transitions and pluriversality (see Escobar 2021). In his talk, which I attended, he noted that the task of imagining possible worlds and futures is currently being undertaken mostly by powerful technology gurus, who are essentially reinventing more of the same: a singular, homogenizing world rather than a world where many worlds fit.[156]

[154] Yape was created in the innovation center of the BCP. https://trome.com/emprende-trome/casos-de-exito/el-exito-de-yape-el-equipo-peruano-que-tocaba-puertas-y-ahora-tienen-13-millones-de-usuarios-imp-noticia/ (last accessed 08/05/2024)

[155] I am thinking that an example of how the NASA structure and its partnerships with corporations has changed is a good analogy for the development field. NASA no longer leads; it facilitates the work of corporations. Another sign of the place that the state occupies now. David Kirby presented work on this in 4S Honolulu 2023.

[156] Arturo Escobar's presentation, UC Davis, 09/26/2022.

Despite the allure of innovation on the surface, each new technology that comes from this type of matrix reveals a sort of legacy system—that is an outdated computing system still in use—running in the background. This system perpetuates habits of thought that reproduce patriarchal, extractive, technocratic, ethnocentric, and top-down outcomes. The consequences of such knowledge-power assemblages are well known: people and livable worlds are not at the center of these practices, even though they frequently claim to act in the name of people's interests and of progress for all.

The problematic cash of the poor and the suitcases full of cash of the rich

> "The more *attachments* it has, the more it exists. (…) To possess is also being possessed; to be attached is to hold and to be held"
> (Bruno Latour 2005, 217).

> "Like possession and attachment, investment speaks to both investing and being invested."
> (Nicholas D'Avella 2019: 38)

> The strings are still there, but they transport autonomy or enslavement depending on *how* they are held. From now on, when we speak of actor we should always add the large network of attachments making it act. As to emancipation, it does not mean 'freed from bonds' but *well*-attached"
> (Bruno Latour 2005: 217-8)

To conclude on a lighter note (if read with a sense of humor, perhaps?), I would like to return to the subject of poor old cash in relation to 'type B' clients. That is, not the poor and their deemed problematic uses of cash in need of financial development interventions, but to the multimillionaires and their—troubling, at least from my perspective—uses of cash. Banks are, as Peebles (2014)

proposes and I discussed earlier, the authorized hoarders of cash among other forms of money, and it seems that this legitimate hoarding affords some freedoms not only to these institutions but also to their top corporate representatives. They are not only clients of an elite type of banca for their personal finances (that of tax havens such as the Grand Cayman Islands or Panama) in which their money in digital form remains unknowable and secured, but they are also, in their own perspective, legitimate users of cash.

I want to specifically return to my conversation with Fernando and to the suitcases full of cash that Dionisio Romero Paoletti, the President of BCP's board (the largest bank and key partner in Modelo Perú) and also Chairman of Credicorp's board (the country's largest financial holding company and parent company of BCP), delivered to Presidential candidates (see Figure 3.2).



Figure 3.2. An alternative media outlet, Wayka.pe, circulated a collage of images using the format and colors of the country's most popular mainstream newspaper called *Trome*—which are also the colors of Keiko Fujimori's political organization (orange and black)—to expose the funds that the CEO of BCP provided for the candidate's campaign in cash (Source: Wayka.pe).

As I was doing fieldwork in 2019, the transnational corruption case known as Operation 'Lava Jato' (car wash, in Portuguese) was unfolding followed closely by local news. This legal

investigation, unprecedented in its scope, involved the Brazilian-based company Odebrecht, Latin America's largest engineering and construction conglomerate. Odebrecht both built many of the region's most important public works projects (ports, airports, irrigation projects, highways, and so on) and systematically bribed government officials, business representatives, and political parties in different countries to secure contracts awarded at inflated prices.[157]

Some of the 'Lava Jato' Peruvian trials occurred that year. As part of them, Romero was summoned to testify. While other Peruvian corporations directly profited from involvement in this specific case of bribery and bid-rigging as intermediaries for Odebrecht –such as the elite owned construction firm Graña y Montero, and even Confiep (National Confederation of Private Business Associations), a formally 'non-profit' organization representing private businesses—Romero was summoned, instead, to address and establish a point or a line of investigation in the case.

The point in question was that of bribery to Presidential candidates both in 2011 and 2016, the period in which Modelo Perú was conceived, formalized as PDP, and launched as Bim. An accusation to which he confessed guilty: Romero had, in fact, personally and *in cash*, delivered *three million and six hundred thousand US dollars* to former Presidential candidate Keiko Fujimori in 2011.[158] In his declarations, he detailed that in 2011, he delivered his 'contribution' (*aporte*) in suitcases full of cash in about seven occasions in brief meetings with the Presidential candidate and another member of her entourage.

For Romero, it was not bribery but a legitimate contribution to save the country from *chavismo*, which he claimed threatened the region and was supposedly represented by the other

[157] See Fergus Shiel and Sasha Chavkin "Bribery Division: What is Odebrecht? Who is Involved?" International Consortium of Investigative Journalists, June 25, 2019. In: https://www.icij.org/investigations/bribery-division/bribery-division-what-is-odebrecht-who-is-involved/

[158] See Elizabeth Salazar Vega "Lava Jato: Ex Graña y Montero confesó corrupción en 16 proyectos de infraestructura" Ojo Público, May 22, 2021. In: https://ojo-publico.com/2722/lava-jato-ex-grana-montero-confeso-corrupcion-16-obras

presidential candidate, Ollanta Humala.[159] He declared that the money was collected from contributions by various Credicorp stockholders, with his family's portion amounting to six hundred and fifty thousand US dollars. While he could not remember the exact amount of each delivery, he calculated that every suitcase contained about US$ 500,000 or US$ 600,000. When Humala was elected President, Credicorp's stock dropped by 19%, representing a loss of 1.5 billion US dollars.[160] He invoked the sake of the country to justify his actions, but it is more likely that economic reasons, including the protection of his own wealth, were powerful motivators in his decisions too.

Romero subsequently supplied, in the 2016 elections, yet another four hundred and fifty thousand dollars this time to support two candidates: Keiko Fujimori of Fuerza Popular (the same candidate from his 2011 'contribution') and to Pedro Pablo Kuczynski (from Peruanos Por el Kambio), who was elected President for that period (2016-2020). Romero used the same method: suitcases full of cash.[161] This time, he participated in three or four meetings, in which, again, he "delivered money in cash for security reasons" (*el dinero se entregó en efectivo […] por motivos de seguridad*).[162] The security cash offers is the possibility of leaving no traces (perhaps also a quality of its opacity—its exchanges are only transparent for its users, but opaque for the rest.

[159] *El chavismo* refers to politics associated with the late Venezuelan President Hugo Chávez. Chavez regime could be characterized as a mix of socialism, populism, and anti-imperialism particularly as challenging U.S. influence in the region, and with an alleged focus on wealth redistribution, nationalization of key industries. In practice, his regime was very controversial, and led to authoritarianism, and the deterioration of democratic institutions and the consequently militarization of the country, impoverishment, and massive migration of its citizens. In the broader Latin American context, the expression '*el chavismo'* is often used in a derogative way, as a threat to *el modelo economico* or the neoliberal economic establishment and its politics.

[160] See: Cash saves the nation, Op Ed by Federico Salazar https://elcomercio.pe/opinion/columnistas/el-cash-salva-la-patria-por-federico-salazar-noticia/

[161] See "Peru: Businessman's statements reveal modus operandi of alleged criminal organization", Andina Noticias, November 19, 2019. In: https://andina.pe/ingles/noticia-peru-businessmans-statements-reveal-modus-operandi-of-alleged-criminal-organization-774493.aspx.

[162] In his declarations he also mentioned that Odebrecht was a BCP bank client. See: "Dionisio Romero revela que entregó US$3.6 millones a Fuerza Popular en maletines," Wayka Noticias, November 19, 2019. In: https://wayka.pe/dionisio-romero-revela-que-entrego-us3-6-millones-a-fuerza-popular-en-maletines/

This second monetary 'contribution' was transported and delivered in suitcases full of cash same year (2016) that BCP, the bank he represented along with many other banks, launched Bim and featured it in local media as promoting both financial inclusion and formalization of the poor via the digitization of their cash. BCP also launched Yape in 2016.

In stark contrast to the bankers and the business sector at large 'bottom of the pyramid' argument advocating for the inclusion of 'the poor' in formal banking through cash digitization, which deems cash-based transactions as unsafe, risky, expensive, inconvenient and also inefficient, and lacking transparency, he, at the top of the financial pyramid, simply asserts his preference for cash due to *security reasons*. One can wonder what those reasons are. Perhaps to avoid being tracked and identified as a donor to that political campaign (or several) and to keep the money from being subject to taxes and state investigation? Aren't those the reasons that drive the digitization of everyone else's cash?[163] Precisely, they want the opacity that cash affords to them, and to reserve it only to themselves.

In our conversation, Fernando reflected on the many things that people do in *efectivo* (cash) precisely because people do not want to leave traces. He mentioned that he laughed when he read these news and declarations on the 'Lava Jato' case. The reasons Romero cited, he noted, "are precisely the same that a regular person ['Type A' client] gives when they say they don't want to use la banca. It is exactly the same argument." In his typical manner, Fernando examined the situation with a speculative example in the first person:

> "Hey, look, I'm going to move 20 million dollars. Why don't I want to make this transaction through a bank [meaning digitally, from one account to another]? Do you have any idea how much that means in terms of ITF?"

[163] This example connects with the concept of 'transaction costs,' that rather than an economic truth, is a 'market device' key in formatting the mobile money payments space but also the imagined client for it (Maurer 2012: 597), and shows shows how it is not a truth, but a market device conveniently deployed.

The ITF, or financial transactions tax, is "imposed on debit and credit transactions with Peruvian bank accounts at a rate of 0.005%."[164] The ITF for twenty million would be one hundred thousand US dollars. While for smaller transactions the ITF isn't a significant cut, it is for this type of money move.

> "And then, you know all the explanations I have to give to the bank, the state, and the taxes? I'm going to quote someone I don't want to quote: Dionisio Romero, justifying the three million he handed over in cash in his little briefcase (*maletincito*)! He could have done it through Panama. I mean, from his Panama account to the candidate's account, also in Panama, and that would have been it. But no, he wanted to make sure that there wasn't even a trace left in Panama."

The opacity of cash transactions, particularly those of the poor, which digitization aims to eliminate, is precisely what Romero Paoletti seeks to recreate for his own money transfers. He needs the opacity and untraceability that cash affords—the freedom to do whatever he wants with his money. However, collecting such large amounts of cash, especially in a foreign currency like US dollars, is not an easy task—even for a banker. In his statements to the public prosecutor, Romero declared "I had a safe in the office where the money was being continuously placed [*en la que se iba depositando*] while the meetings [with candidates] were being coordinated. When the day of the meeting arrived, I put the money in a briefcase and took it to the house (…)."[165]

Cash is mobilized in this way to perform an exchange between parties who also have overseas accounts in tax havens, even in the same country (Panama). But cash is the *safest way* to avoid scrutiny not only for Romero but also for the political candidate. In a style reminiscent of a

[164] Infocard, Taxes in Peru https://trade.ec.europa.eu/access-to-markets/en/country-assets/Tax_system.pdf
[165] Screenshots of Romero's official declarations are presented in this online news note: https://peru21.pe/politica/keiko-fujimori-dionisio-romero-dice-que-le-dio-3-millones-y-medio-para-campana-de-2011-noticia/ (last accessed 08/05/2024)

narco deal or an The Godfather-type transaction, the effort required to procure and store the cash—while avoiding leaving a trace, evading taxes, and circumventing the provision of uncomfortable legal explanations to regulators--and to transport it in suitcases, risking theft, and deliver it in different installments through personal meetings, is substantial.[166] That is why Fernando and I couldn't help but laugh, both when these revelations became public and during our conversation as we tried to imagine how all this was done.

This example also highlights that this money, as foreign currency in cash, stored in a safe, transported in suitcases, and delivered in person, is unlike any other investment made by this banker and his peers. He is invested in a particular future for the country, and acting on that commitment requires a set of practices and intimacies distinct from other investments. Here, I draw on D'Avella's (2019) work and the Argentine investors during the country's post-2001 economic crisis. As he observes, investors "don't treat any one investment like any other but attend to their particular capacities and to the relational webs of which they are a part" (38).[167] Thinking ecologically about investments "concerns not only relations between diverse things, but also relations between people and things" and between people; "it does not just refer to a series of investments understood as autonomous objects (real state, dollars, stocks). Rather, it draws attention to investment as a form of connection between persons and the things in which they are invested" (38-39). In sum, things are what they are because of the relations that constitute them—"reciprocal relations through which people and things become together" (39).

[166] Also, it brings back collective imaginaries of a time in which Vladimiro Montesinos, advisor of President Alberto Fujimori in the nineties and early 2000s, used to bribe all kinds of elites (politicians, businesspeople, media celebrities) with cash and record his meetings (los vladi-videos).

[167] In his case: "dollars and pesos, bank accounts and cash, and gold and bricks are not just treated as objects unto themselves by Argentine investors, but are understood as part of an ecology, related to each other and the world around them in complex ways." (D'Avella 2019: 38)

On November 18th 2019, as Romero was participating in the 'Lava Jato' local hearings, he shared an open letter addressed to all the collaborators of the companies of the Credicorp corporation, where he explained how he personally evaluated his actions. Here is an extract that portrays how he, returning to the epigraph of this section, is invested in his investment, and the attachments that constitute it:

> "In the time that has passed [since the delivery of the suitcases of cash], I have reflected on our decisions on several occasions and have always reached the same conclusion: making these contributions to Fuerza 2011was the responsible decision in the face of a threat like the one *el chavismo* posed to Peruvians and the Peruvian economy.
> I am convinced that we had a responsibility with the country, as well as to the shareholders, the tens of thousands of employees of the companies I represent, and to the clients, savers, pensioners, and suppliers who depend on the stability [*solidez*] of our businesses.
> With the same sense of responsibility toward the country, in 2016, we supported the two candidacies that promoted the economic and social development model in which we believe.
> Peru is my country, the country where I grew up, and I have an unwavering commitment to contribute to its development and progress. It is a commitment I renew with optimism every day." (my translation) [168]

Romero's letter speaks in the first-person plural, a 'we' that he represents. This money is not his alone, it is collective: a common fund resulting from many donations (aportes) by other businesspeople who share his convictions. He and those he represents do not consider it bribery. On the contrary, they see it as a noble cause—a matter of principles—for the development of the country (and against perceived threats like *el chavismo*), the preservation of the economic model, and the stability of their businesses and all their 'collaborators,' starting by their shareholders.

[168] Source: Official account of Credicorp in X (@CredicorpGroup): https://x.com/CredicorpGroup/status/1196517170064363521/photo/3 (last accessed 08/05/2024, translated with the use of Google translate and my edits)

This type of investment in the future of the nation involves participating in a sort of gift economy (a classic topic in Anthropology) where gift-giving (or contributions) could potentially secure future leverage and help stir events in the desired direction, according to this businessman, without fear of later reprisals should the other candidate win (because the origins of the money in paper form are untraceable beyond him—the deliverer of this collective investment). And he, being the CEO of the largest corporation in the country, it is safe to say, has little to lose by being the messenger. That is also the amusing part of the story for Fernando and me, as we see the tensions between the solemnity of the claims and evocations to save the nation and the practices deployed in its name. Our country, in all its elite folklore, never ceases to surprise us—and it is still standing.

Finally, this story shows the complex and often contradictory relationship between bankers, political elites, state regulators, and the government. It shows the different points of convergence and divergence in their relatings. In some offices, they collaborate to draw laws for financial inclusion and implement money technologies for the poor, like Modelo Perú and Bim. In other instances, they mistrust each other, they don't have an interest in common, and some are summoned to testify in court by the others.

Although these 'gift economies' enacted in cash did not remain hidden from public view, they had little consequence for Dionisio Romero Paoletti, who continued to serve as the President of BCP's board, while *voluntarily* stepping down as the chairman of Credicorp. He also remained the President of the board of the Romero Foundation, which was funded by his father, representing the second generation of the business empire initiated by his grandfather, who migrated from Spain.[169]

Fast forward to 2024: Yape has now fifteen million users in Peru who conduct over ten million transactions per day. Yape hasn't replaced cash, but it has become a ubiquitous money

[169] Source : Peru21 in: https://peru21.pe/politica/dionisio-romero-paoletti-yo-soy-muy-optimista-en-el-peru-noticia/

technology alongside cash and the many existing digital options (see Figure 3.3). It has even become a verb—*Yapeame*—and is now part of the culture, for instance, incorporated in the New Year's eve tradition of wearing yellow for good luck and money, with sayings like: *Yapeame papi, aquí está mi QR* [Send me money sugar daddy, here is my QR]. In sum, Yape is an integral part of the digital environments people live in. It has even expanded to Bolivia.

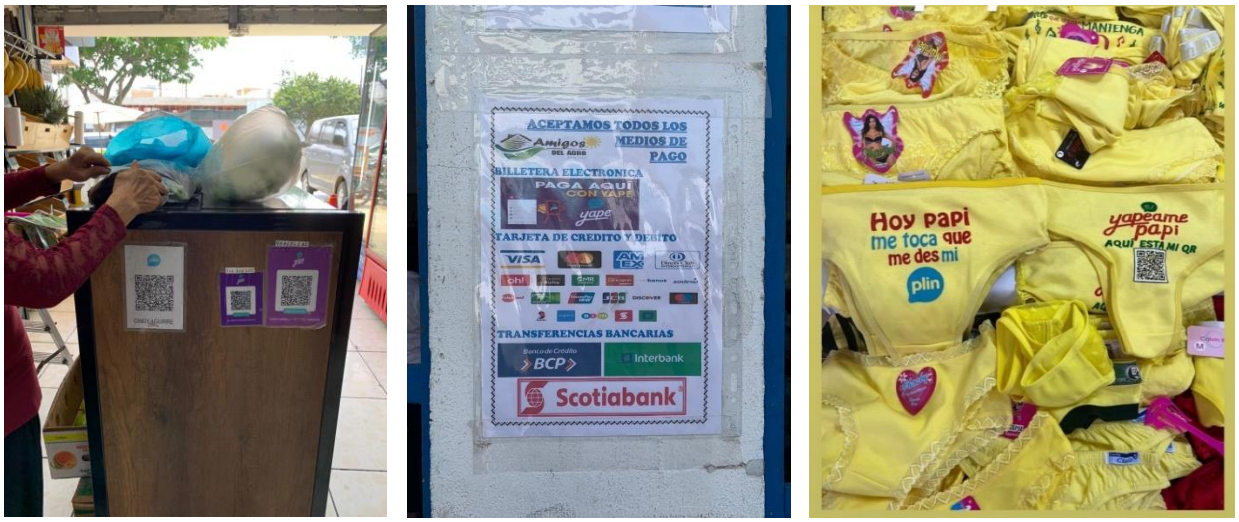


Figure 3.3 From left to right: A small shop in Lima with the QRs for payment through Yape and Plin. A sign outside a shop that sells supplies for small farmers in Huaral. Yellow underwear for New Year's Eve good luck and a year of abundance in a market stall featuring jokes that include Plin and Yape, even QRs. Credits: Maria Llorens and Estefanía Chumpitaz.

Officially, and in public perception (college papers, innovation talks, social media, etc) Yape is regarded as a technological success story. This perception includes how Yape has positioned itself as promoting financial inclusion and banking the unbanked. As seen in Figure 3.4, financial inclusion through Yape reproduces the imagery already discussed in Chapter 2. Although the type of phone has changed (with a smartphone replacing a basic cellphone) and it depicts a different platform for digital money, the usual elements persist, similar to Bim's inclusive representations: money is not

featured, and women—often depicted as proxies, such as the full-time fighters, the poor, the unbanked—remain central.



Figure 3.4 Selection of images after a Google Search with the following key words: 'Yape inclusion financiera' (financial inclusion), August 2024. Credits: YAPE

Meanwhile, Romero in a recent interview expresses his optimism about Peru, donning an Andean scarf and launching a fellowship program for the preservation of *lenguas originarias* in Cusco (See Figure 3.5). He appears to have moved on from the time in which he delivered suitcases full of cash—but who knows? We may need to wait until the next electoral season to find out.



Figure 3.5 Romero and the Romero Foundation, the preservation of native languages and the Andean scarf, a symbol of his fashionable Peruvianness (Source: Peru21).

The Romero's and their peers reserve the right to maintain plural 'repertoires of money' (Guyer 2004), while attempting to homogenize the money of the poor. Whether through the nation-state imagination or the corporate one, the economically less advantaged are imagined as passive beneficiaries of their processes of reimagining money and a polity for it, and as sites of extraction. While my research and fieldwork focused primarily on the proponents, developers, promoters, and regulators of mobile money, I wonder what the users of these technologies make of them. I am curious to explore, as an open question for future research, how people who did not use bank services before Bim, Yape or Plin perceive and use these technologies of money. What are their new ecologies of digital and non-digital money practices? How do they earmark their various forms of monies, and for what purposes and relatings? What uses do they reserve for cash? How do they value cash?

My optimistic speculation—which, paraphrasing D'Avella (2019), opens possibilities in the face of probabilities (that is, the prevailing notion that capitalism 'always wins')—is that, just as the wealthy find ways to circumvent their own rules or the ones they create for other groups, creativity abounds everywhere (and both in the practices and the ways of justifying and explaining them to themselves), when we look closely at things.

I am very optimistic that the people these digitization practices are trying to extract and surveil are finding ways to make life possible and circumvent these new chains of oppression, while still incorporating these new technologies in their own money repertoires, ecologies of investment, and transactional communities. Returning to the epigraph at the beginning of this concluding section, I see them more as mediators, creating spaces of autonomy moving the strings that try to enslave them, and shaping their own chains of associations.

CHAPTER 4

"Donde se atracan las cañerías" or the difference between existing and operating

INTRODUCTION: Now that we exist, you can study us

I learned about a distinction between what a technology needs to *exist* as opposed to what it needs to *properly function* from the group of IT engineers prototyping and building Bim, the mobile money wallet for a partnership of over twenty banks in Peru. This distinction and the practices that constitute it are the center of this chapter. These practices revolve around the engineers' search and intervention at the sites where an expected flow of money is not happening because, in their words, *las cañerías se atracan* or are *atascadas* (the pipelines are blocked).

The team of engineers was commissioned by the bankers united in this partnership with an intriguing challenge. They had to design and implement a mobile money wallet not as a banking app for smartphones (dependent on internet access) but through the communication channels of basic mobile phones (SMS, USSD) and in control of telecommunication companies, which they often referred as "las operadoras" (mobile network operators or telecoms).[170] I was curious: why were bankers and engineers choosing basic cellphones and no internet to transport information as money in 2015, when smartphones were on the rise in the country and everywhere else—and none of them had a basic cellphone anymore?

[170] SMS stands for Short Message Service, and USSD stands for Unstructured Supplementary Service Data. The latter is a service, or 'channel' as communication practitioners call it, that creates a real-time connection between users and a service provider, allowing users to communicate with the provider through a menu-based system. Bim used the USSD channel for transactions (to transport money as information) and SMS for confirmation messages (an error messages as well) to communicate with Bim users after each transaction.

It was because, as they explained to me, this mobile wallet was designed for *los no bancarizados* (the unbanked) or people who do not have bank accounts, a category they used alternating with 'the poor' and *los luchadores a tiempo completo* (the full-time fighters) of "informal cash economies." In other words, these engineers and the bankers who hired them imagined the population they were targeting with this mobile wallet as *having* basic cellphones and *not having* a relation with banks. Their assumption was that this population didn't have money in digital form, only coins and bills.[171] According to the engineers' calculations, based on national statistics and international indexes which surveyed the Latin American region, the 'unbanked' population grouped 71% of people older than 15 years old in the country (See Figure 4.1).



Figure 4.1. The 'full time fighters.' Source: "Modelo Peru Webinar: The world's first shared mobile payments platform" for the Better than Cash Alliance, posted on YouTube on 04/18/2016.

[171] I discuss the making of categories and 'othering' practices as part of the proponents of Modelo Peru practices (and necessary for their prototype) in Chapter 1.

The proponents of this banking project aimed to promote the digitization of cash via mobile phones to integrate local cash economies (or the economies of 'the poor') into established financial systems. As detailed in Dissertation's Introduction and in Chapter 1, they called it "financial inclusion"—following the international development jargon of the time (mid-2010s)—where inclusion could be understood in two ways: as cash that was not previously digitized through other channels (like credit cards) becoming digitized, that is, the inclusion of money in national economies, but also the inclusion of people ('the poor') in market economies. They also called it "banking the unbanked," as bankers and the engineers who worked for them were trying to digitize cash via mobile phones but by keeping money under the control of banks.

As described in Chapter 1, since the late 2000s, the money of low-income, impoverished populations in different parts of the world, was being digitized and circulated via mobile phones under the control of telecoms. This was money in digital form, in circulation, doing transactions, *and not banked*. The most salient and profitable example was M-Pesa in Kenya, which expanded to other neighboring countries (Omwansa & Sullivan 2012). M-Pesa was considered at the time as proof that there was "fortune at the bottom of the pyramid" to use business management guru C.K. Prahalad's words.[172] For Peruvian banks, this business model—telecoms using their own infrastructure to move money in digital form via basic cellphones—seemed both an interesting business opportunity and a threat to them back in 2011 when they started organizing this project. It was an opportunity to tap into a new vast market of 'unbanked' people. It was a threat because, as one engineer explained, it seemed that mobile money as a business of telecoms could effectively *desintermediar* the banks. "Desintermediar" or disintermediate (or un-intermediate) means to remove the intermediaries. Banks, as traditional intermediaries of money, feared that possible future—a sentiment shared throughout the global banking sector at that time, not just in Peru. The engineers' challenge was thus to find a

[172] Prahalad, The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits, 2004.

viable, material answer to the question: How could the banks use the infrastructure of telecoms to make money circulate but under the banks' control?

Back then, in the early 2010s, it was unclear how the mobile money 'African innovation' could travel and affect banks' business elsewhere and how many resources banks would need to face it. Thus, one argument of my dissertation—detailed in its Introduction—is that the Peruvian bankers united to share resources (knowledge, experts and capital) to figure out how to reverse M-Pesa. The infrastructural challenge the engineers had, and which is the center of this chapter, in other words, was to figure out how to use the telecoms' *tuberías* or *cañerías* (pipelines) as they indistinctively called them, for the profit of banks. Or, in short, how to un-intermediate the telecoms from any attempt to grasp the business of money in Peru.

Mediation, disintermediation and dumb pipelines

My chapter contributes to a conversation in the field of Anthropology of Money about issues of agency, mediation and translation by examining money transformations and mobile money endeavors. This conversation draws on sociologist of science and technology Bruno Latour's language of 'mediators' and 'intermediaries' which provides a useful conceptual framework to think with issues of intermediation and disintermediation faced by the engineers I followed in the field. For Latour, an intermediary is a black box, it 'transports meaning or force without transformation" (2005: 39). In computing and engineering, a black box is a system that receives inputs and delivers outputs without users having any knowledge of its internal workings as these remain opaque or invisible to

them.[173] The term can be used to define many entities, for example, a Google search algorithm, an engine, a credit card, an institution, or ChatGPT.

Intermediaries for Latour are predictable; defining their inputs is enough to anticipate their outputs. With mediators, in contrast, "their input is never a good predictor of their output," as they transform what they transport, they can generate multiple outputs and thus "their specificity has to be taken into account every time" (Ibid). As anthropologists Bill Maurer, Taylor Nelms and Stephen Rea state, thinking with Latour and through mobile money, whether an entity acts as mediator or intermediary is not fixed: "mediators become intermediaries, and vice versa, over time or under certain conditions. Such transformations are an effect of the wider ecology of relations in which agentive entities are embedded" (2013:57).

At the end of the 2000s, the 'African innovation' that moved money through telecoms' infrastructure (all of it: local providers, telephone makers, networking companies) reduced banks to what mobile money professionals refer to as 'dumb pipes,'—or in the language of Bim engineers: M-Pesa successfully *disintermediated* banks in Kenya, with the support of state regulation. Safaricom, the telecom leading this process, controlled the mobile channels (SMS, USSD, SIM cards), and constituted an essential gatekeeper –or a key mediator, in Latour's terms- in deploying mobile money (Donovan 2012). While banks were still needed for the exchange of real money in exchange of M-Pesa's digital tokens (for instance, mobile money still used banks' infrastructures to store money), banks were not actively participating in this endeavor; they were not receiving any revenue "in the form of fees paid by the client, by the agents, or by other partners in the [new] 'ecosystem" (Maurer, Nelms & Rea 2013:68). The problem was that, in the business of money "…no one wants to be a 'dumb pipe'. That is, no one wants to be a bridge or channel that can be passed over or through for

[173] https://theconversation.com/what-is-a-black-box-a-computer-scientist-explains-what-it-means-when-the-inner-workings-of-ais-are-hidden-203888 and Wikipedia.

free. Everyone wants to be a mediator, not an intermediary. (…), no one wants to play the role of public infrastructure or common good" (Maurer, Nelms & Rea 2013:68).

However, as Maurer, Nelms and Rea noted, the African telecom did not have complete control over this process; rather, it resulted through the network that mobile money created in Kenya, as described here. Hence, a different arrangement of participants could produce a different outcome. What I study, in these terms, is how, in practice, the task of the engineers I followed was to open the black box of mobile money via telecoms and reverse-engineer it so it could work for the banks. That is, banks as mediators and telecoms as intermediaries or the action of disintermediating telecoms while using their pipes.

It turned out that to achieve this, engineers had to go beyond the spaces (mostly offices and institutional settings) and scope of work they initially considered. For the engineers, this whole endeavor was in essence a payment agreement (*un acuerdo de pagos*) between banks, enacted through a particular material infrastructure: a mobile wallet. Their formal task was to create the pipelines through which digital money circulates and to administer the proper reporting and settlement of payments among the entities involved in this payment agreement. Once they would have built and tested the mobile wallet and launched it into production (that is, to the 'real world' of users), they imagined their tasks as providing support for its proper functioning, fixing issues in its transportation chain, continuing to develop new 'functionalities' for it, and generating sets of reports for each bank and the state regulators. One major challenge they faced, however, was how to make non-digital money enter this infrastructure. In short, their challenge was to deal with the figure of the unbanked they had created and now they needed to ground in practice.

Points of Conversion: cash→ digital, existing→ functioning

Peruvian bankers envisioned the creation of a single and shared infrastructure for mobile money which would also be interoperable (accessible via all mobile network operators in the country). Through their partnership, the bankers were not only prototyping an ambitious, all-encompassing, collaborative digital money infrastructure. They were also modeling a way to collaborate together against what at the time they saw as both a threat to their industry as a whole and as an opportunity, one whose effects were hard to *dimensionar* (to measure, to calculate its proportions). As they were organizing their partnership in conversation with international development conferences and banking and telecommunications forums, their initiative came to be known as Modelo Peru (the Peru Model): the first collaborative banking initiative aimed at fostering financial inclusion. In other words, their prototyping practices required 'othering' a certain group (the allegedly excluded, the poor, the unbanked) that they were supposed to benefit, while incorporating their money into a profitable circuit. The bankers termed it a 'collaboration among competitors' as they would all eventually profit from the circulation of money through the single and shared infrastructure they envisioned.

The engineers among whom I conducted fieldwork between 2015 and 2020 were in charge of materializing these plans into a working infrastructure for digital money and were hired to work in a Peruvian Digital Payments (or PDP), the company the banks established to run their partnership.[174] The quote that titles this introduction ("now that we exist, you can study us") comes from an email I received from a former PDP manager, who back in early 2016, enthusiastically announced to me that Bim (or Billetera Movil, Mobile Wallet) was finally coming into existence in infrastructural form and

[174] My fieldwork consisted in short field visits (2 months in 2015, 2 weeks in 2016), 11 months in 2017 and 3 months in 2019, plus regular online conversations at least through 2020- 2021, and also after but less frequently.

leaving its form as a project (as Modelo Peru), which in her expression seemed sort of a lesser or more speculative mode of existence.

A project may or may not become infrastructure, as engineers know well, and she was sharing her excitement because Bim succeeded in moving from one state of being to another.[175] While it can be said that a project has a mode of existence traceable in the different materialities, practices and places that it leaves behind such as paper and digital documents, prototypes, budgets, plans, sketches, terms of reference, agreements, slide presentations, diagrams, offices, meetings and so on, for this PDP former manager there was an important distinction between a project and a system that intervenes in the world. As one of the engineers working on Bim put it: "right now this technology is hard to explain because it is new. In time though, like for example, the Microsoft Office *entorno* (environment or atmospheric surrounding), we won't need to explain it or even 'understand' it because we are going to live it."

According to its implementers at PDP, first Bim was initially a project, then it turned into an infrastructural form, and finally it needed users to function and really intervene in the world, so people could live it (*vivirla*) without the need of further explanations. But they set to cater potential users who were *unbanked.* At the level of the objectives and long-term goals of this banking project, as I just explained, this 'unbanked-ness' was precisely the status that the partnership of banks sought to transform: they wanted to *bank* people via mobile phones. However, the fact that the potential users they envisioned for this service lacked bank accounts, and of money already in digital form, presented a significant practical problem for the engineers' plans. This is where the pipelines were blocked; the entry point of the whole future *entorno* Bim required money in digital form, not in cash form.

[175] See Latour discussing the prototyping of Aramis, a transportation system for Paris,1996.

For people like me, and I am almost certain it is the case for you, my reader, this banking-through-basic-phones endeavor was very hard to imagine when first explained by these engineers, because my point of departure was as a *banked* person (and as a smartphone holder). My whole adult life I have had a bank account and the primary form of money that I have related to (as earnings, expenses, savings, transactions) is digital money, whether with cards or online transactions, and lately also mobile banking Apps. When I need cash for some reason, I use Automated Teller Machines (ATMs) or human bank cashiers to withdraw digital money from my bank account converted, through that operation, into cash. So, my money is primarily digitized; converted into cash as needed.

Here the engineers' project planning initial premise is quite the opposite: there is only cash that 'the full-time fighters' possess, and the banks they are working for aim to convert it into digital via Bim, the mobile money platform that they developed for the banks. Although in practice, people who they would classify under these categories of intervention did interact with banks in other ways and complicating any simple distinction between banked and unbanked or digital and non-digital as we will see shortly, their relatings were not as regular or as those of established clients, and they mostly used cash (*efectivo*).

Engineers moved from planning phases to building Bim, assuming that banks were taking care of a crucial intermediary infrastructure required for their plans to work: ATMs or alternative methods (e.g., humans 'agents' as ATMs) serving as points of conversion—but in reverse. Instead of their usual function as *cash deliverers* of what starts as digital money already owned by bank account holders, these intermediary infrastructures were needed to serve as *cash receivers* to convert physical currency of the 'unbanked' into digital funds: to include—or recruit— 'the poor' and their cash (in)to the financial system. These points of conversion—the intermediaries in the digital infrastructure—were thus fundamental to the distinction that engineers made when talking about Bim, and what it

needed to exist as a digital-financial infrastructure, and what it needed, in their words, to *actually function* or to function *as it should* (*funcionar realmente, como debería*).

This distinction requires some explanation. There is one mainstream imagination of how digital technology works, which is simply without humans intermediating aspects of the technology. That is, humans use technology but do not perform the work that technology is expected to do on its own. There is vast evidence and scholarly work on how human intermediaries are actually part of the critical infrastructures performing tasks that users assume are done by the technology itself. Take for instance the Amazon Turk (Irani 2015 & 2013; Irani & Silberman 2013) or the armies of human 'cleaners' operated through third parties by Facebook and similar companies, curating the highly sanitized social media environments that most users see.[176] This imagination of technology has humans operating as infrastructure performing different types of microwork, but they remain invisible—even purposedly hidden—to users.

The type of imagination that I am discussing here has humans operating as infrastructure and visible to users because it is technology created 'for the poor.' The imagination of 'inclusion' needs to include something 'not usual': that is, the human agents that, like in the M-Pesa model, operate as points of conversion for cash that has not been previously digitized. These human points of conversion in the digital infrastructure would 'put a face' in an otherwise anonymous system and contribute to the infrastructure by 'adding trust' to a structure of feelings (Williams 1961) colored by corruption, hierarchies, and racialized hierarchies of mistrust, that I discuss in more detail in the following chapter.[177]

[176] See for instance the documentary "The Cleaners" (2018) directed by Hans Block and Moritz Riesewieck, that explores the shady industry of digital cleaning where social media tycoons get rid of violence, pornography and political content via third parties and underpaid labor overseas.
[177] Also see Chapter 2, The women in the picture.

PDP engineers connected Bim's *existence* to what they commonly called *el fierro* (the iron) or its "pipelines," that is, the physical infrastructures and systems linked to each other in different locations that hosted the Bim wallet and allowed for the circulation of digital money within it, as discussed in Chapter 1. Bim's existence referred to what engineers considered properly digital and belonging to their space of expertise and its related practices and tools. These included, for example, the multinational IT company which provided the wallet software, the mobile network operators (MNOs or telecoms) which supplied the cellphone interface, a local data center company hosting Bim's servers, and the Application Programming Interfaces (APIs) connecting the internal systems of each bank to the Bim wallet, and another third party acting as the Call Center to support users' issues, and PDP which was in charge of overseeing and producing sets of reports on the whole endeavor and for its different stakeholders.

Thus, Bim as an infrastructure for mobile money or its "pipelines," existed through the coordination of these practices and the experts and workers interconnecting these various entities. These entities and practices often figured in the engineers' diagrams, what they called 'the architecture of the system.' By early 2016, around the time I received the email mentioned above, they had this system ready so I could study it; Bim was, for them, already *existing*, as a system in which money, in digital form, could circulate as information.

Yet, the problem was that Bim was not *functioning;* it didn't have digital money circulating through it, and thus, in their words, it was *empty*. Engineers had transformed Bim from a project into an infrastructural form and now they were struggling to make it function. Bim already existed in an infrastructural form made of digital pipelines, Application Programming Interfaces (APIs), servers, cables, protocols, operational manual and its periodically updated versions or *versionamientos*, data sets, protocols for reporting to state regulators and for daily settlement among bank participants, call center for customer support, and so on. However, Bim didn't function because it had no money

circulating through its pipelines, no users calling the customer support line, and no money to settle between banks or report to the government.

In the engineers' stages: it had been developed, tested and launched into production.[178] In the manager's figure of speech: it was first a project and now it existed as infrastructure. Yet, for everyone at PDP, it needed users to move to a further mode of existence, in which it was expected to become a 'digital ecosystem,' an environment for users' day-to-day economies. As an 'ecosystem,' the plan was to turn Bim into a one-stop shop where people can interact among each other (from person to person or P2P) but also with businesses and the government and perform all kinds of transactions—from topping up their cellphones with airtime to paying bills and taxes and sending remittances (see Figure 4.2).

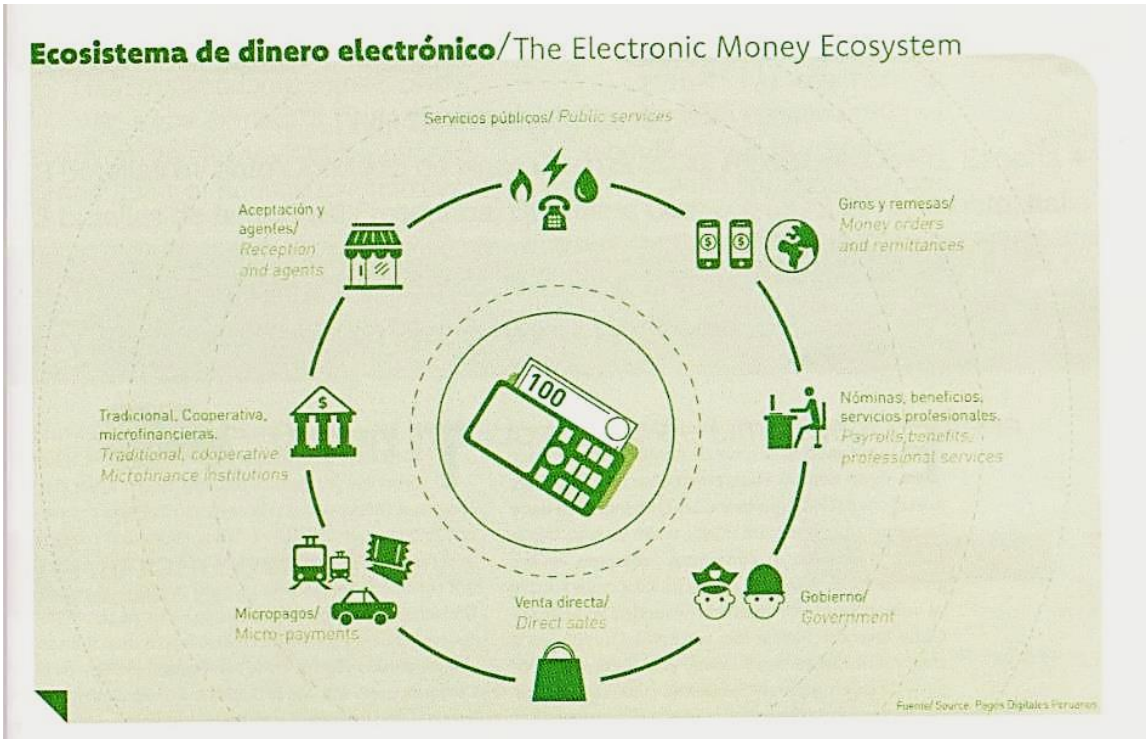


Figure 4.2. "The Electronic Money Ecosystem" as presented at the IMF-WB Annual Meetings 2015. Source: Semana Economica, 10/04/2015.

[178] See Chapter 2 for more on engineers DTP environments and tasks.

For the engineers, Bim's pipelines were not clogged; they weren't filled up with digital matter obstructing a seamless flow. The problem was, in their terms, that the entry point to the digital pipelines was blocked or obstructed, preventing the proper functioning of the system. This 'blockage' was occurring in the extra digital realm (and initially beyond the scope of the engineers' work): that is, the point in which the 'unbanked' are expected to be located and where their cash turns into digital in order to circulate as such through mobile phones. It was interesting to me that the engineers used the metaphor of an *atasco* (blockage) as it was not the case that, in practice, people were waiting in line to use Bim and desperate to find these points of conversion from cash to digital. There was no matter (no money, nor people) waiting at an extra digital point to use this new infrastructure. People were mostly unaware of this new technology for transactions.

The blockage was thus, part of an engineering imagination of flows and chains of production, which identified these points of conversion as a problem of the project's original design and as an urgent site for their intervention, as it was [preemptively] blocked—even though there were not users or money yet looking for these pipelines—. As they would promptly find out, attracting users was not simply a matter of un-blocking pipelines and technologically securing points of access to the mobile money wallet, through their usual programming and coordination practices with the bank partners. This challenge required them to go to the field and conduct different fieldwork 'experiments' as they called them, with potential users to generate transactions in the system (*transaccionalidad*), and which I had the privilege to accompany.

Engineers at PDP were thus confronted with the need of, on the one hand, to create accessible and reliable cash in/cash out points where Bim's imagined users ('the poor') would convert their cash into digital form to enter the existing—yet empty—pipelines they just designed and deployed. These pipelines, at least ideally, had successfully reverse-engineered M-Pesa to keep money under the control of banks, though they existed but were not yet in use. On the other hand, they needed

mechanisms to attract users to these points of conversion and generate and increase the levels of "transactionality" in the system.

In other words, the engineers realized that for the properly digital pipelines they had deployed to work for transporting digital money, Bim needed another set of practices –or another kind of pipelines–that were not themselves digital or for which not much digital expertise was necessary. Although initially beyond the scope of their work, the engineers had to deal with the technological aspects of digital money that were not 'centrally' considered properly digital: that is, the setting up of a network of humans-with-cellphones to perform these functions for the system: access and transactionality. This is what they referred to as a "last mile" problem –I return to this term later-, the not centrally digital link—or also human link—that the digital needed to operate in practice in the peripheries in which their technology was expected to work.

Unblocking Access: Agents as points of conversion from cash to digital

As I have mentioned, for Bim to function as intended, it needed to cater to the needs of a 'population' whose starting point or default position vis-à-vis money was as cash holders—different from the engineers (and myself, their ethnographer) designing it (the 'other' that was part of their design practices). The engineers' design (the architecture of the system) assumed the existence of fully operational, accessible, and reliable points of conversion from cash to digital, where these imagined users ('unbanked poor') would convert their cash into digital form to enter the pipelines they designed and deployed. These points of conversion where potential 'unbanked' users can timely convert their cash into digital tokens and back to cash if needed were, thus, crucial both for filling up

the digital pipes with money, so to speak, and for building trust in the system. Without them, users could not trust this technology nor think that it was more convenient than cash.[179]

The engineers told me that banks were supposed to provide these points of conversion by sharing their already built-in infrastructure. These points consisted of ATMs, bank branches and particularly their network of "correspondent agents"—shopkeepers equipped with a point-of-sale (POS) device who act on behalf of banks in areas where there are no bank offices or ATMs available, like the peripheries of the main cities where they expected their technology to work. The sharing of already built-in infrastructure, particularly these correspondent agents, was one of the material pillars expected to ground the Modelo Peru model and its promises of collaboration for financial inclusion, making it both innovative and appealing—when it was a project.

The banks proponents of Modelo Peru also borrowed the figure of the agent for mobile money from M-Pesa, the mobile money business model the engineers were reverse engineering. The M-Pesa agent, once an airtime point of distribution for users to call and send messages through their mobile phones in exchange of their cash, was repurposed as a mobile money point of conversion for its users. That was part of the secret success recipe of M-Pesa, an innovation from a Kenyan telecom.[180] Similar sorts of agents already existed locally, though part of different sociotechnical and regulatory arrangements.[181] In Peru, like in Kenya, local *operadoras* (telecoms) had shopkeepers acting as their agents for top-ups in almost every urban corner shop, including low-income areas and smaller towns, but telecoms were not using their networks of agents for mobile money transactions

[179] I discuss trust in the following chapter, also see Chapter 2 and people's problem with banks.
[180] Cite. More complicated than that (result of series of experimentations, a state-private endeavor, transnational Kenyan Safaricom /UK Vodaphone, etc.) but beyond the scope of my chapter.
[181] Airtime in Peru could not be sent from a user to another like in Kenya, as a gift (which then became considered money, airtime money), users in Peru could only top up their own phones.

via basic cellphones and their SMS and USSD channels.[182] Banks also had their correspondent agents, not as many as those of telecoms but still numbering in the thousands.

Therefore, when Modelo Perú was still a project, it seemed feasible to incorporate shopkeepers as points of conversion for Bim and as part of the existing local ecosystems of shopkeepers already acting as agents for banks and telecoms. Proponents of the model presented, discussed, disseminated, and promised this idea through diagrams, PowerPoint presentations, talks, and various written pieces in different national and international forums. Once Bim was launched, however, banks were reluctant and slow to fulfill their promises of collaboration. Some banks did hire promoters and did some initial rounds visiting shopkeepers and advertising Bim in 2016. They enrolled users (opened wallets for them) and established some cash-in points in shops with a one-time seeding strategy (some funds in their wallets), when Bim was launched. After that gesture, however, there was no follow up with merchants enrolled as agents who resumed to their normal routines and forgot about Bim. Also, most of the users enrolled in this way remained completely inactive. Also, banks did not enroll their own correspondent agents to work for Bim though; they did not share their infrastructure in place for the benefit of all the partners in Bim.

Despite the engineers' frustration with the banks, during my time with them in the field and through meetings with bank representatives, it seemed to me that this sharing aspect was something the banks promised but hadn't really written and budgeted as they did with other aspects of this endeavor. It was a gray area, which diluted and dispersed their responsibility. It was also beyond the engineers' control because they were working through the third party (PDP) that the banks created to manage their agreement of collaboration and its resulting infrastructure (Bim). Yet, they were not part of the banks themselves. In any case, despite all the talk of collaboration when this initiative was

[182] There were some prior experimentation on this, and alliances that didn't succeed, like Wanda from Movistar and BCP.

a project (Modelo Perú), there were few results once it transitioned to its new mode of existence as an infrastructure called Bim. Everyone at PDP knew it required these human agents as points of conversion to function properly, and they weren't quite ready.

Still, as I witnessed in monthly meetings, PDP engineers needed to report operation milestones and progress to bank representatives. While Bim was a project, it was OK to translate these milestones in terms of infrastructure development only. But now that Bim existed in infrastructural form, progress translated mostly in terms of numbers of transactions, amounts of money and of active users. Managers were also pressured by PDP's board of directors to show results in terms of growing numbers of users and money circulating via Bim. Bim could not grow without users connecting with the points of conversion, but PDP had a very limited budget for activities beyond what was considered the management, support and maintenance of the properly digital (part of the architecture of the system) and which assumed money already in digital form circulating as information through the pipelines they deployed. Consequently, the engineers were forced to go to the field and conduct experiments to reach users and attract their money to the system.

Transactionality: getting users onboarded with the new technology for money

Unblocking access to cash-in/out points for potential users, the engineers realized, was not a matter of having those points technologically ready only, or of having a one-time seeding strategy (as banks initially did). There was no demand for Bim among the supposedly potential unbanked users in need of this service (as the project imagined). No one knew about Bim, and banks did not seem invested in systematically promoting it any time soon.

Access and transactionality were linked aspects: there was a human component needed connecting the dots, or "lubricating the pipes" as they would call it. For Bim to work, engineers required people to actively ask for the service, bringing money to it, and activating through their demand the cash-in points as well.

In the following pages, the chapter focuses on one of the strategies that engineers deployed with their meager budget in their attempts to make Bim properly function, that of the *Asesores Bim* or Bim advisors. Bim advisors were responsible for convincing shopkeepers to become what they called 'Bim[m]ers,' that is trustworthy cash-to-digital points of conversion for the final users of mobile money through Bim. These points took the form of human 'agents' with basic cellphones acting as 'Bimmers,' which among mobile money professionals are often referred to as 'Human ATMs' (Maurer, Nelms and Rea 2013). The idea is that by turning local merchants in certain low-income peri urban areas of the capital city (and in some other towns in the rest of the country) into Bimmers, they will, in turn, promote the use of Bim with their 'unbanked' shop clients.

My chapter contributes to the classic Science and Technology Studies question of how technology operates in practice, far from the centers where it is conceived and into the peripheries where it is expected to be used. I contrast the envisioned functionality of the system (portrayed in engineering and banking diagrams) with its actual operation through often overlooked human mediators (Latour 1996; 2005), who are invisible in the formal discourse and representation of the technology. I examine the long chains of mediation and translation in the assemblage of engineers, Bim advisors, Bimmers, phones and money, needed for Bim to work. As I have already mentioned, anthropologists of money have brought these Latourian concepts to think about mobile money, mainly in the case of the Kenyan M-Pesa, and the role that agents (like the Bimmers) play on it (Maurer, Nelms and Rea 2013; Kendall et. al. 2011). While the figure of the agent has been examined extensively in their work, I pay attention to the often-overlooked figure of the money

supplier of the Agent, here in the form of Bim advisors (but also as las distribuidoras or suppliers of airtime for telecoms).

I also dwell on the figure of the Bimmer, which while it borrows from previous figures such as the M-Pesa and the local telecom agents, but is not quite equivalent to them. For the engineers, Bimmers are a special type of case in the system ("una casuistica especial en el sistema"). Bimmers, using the engineers' metaphors when explaining this figure to the banks, are equivalent to what Microsoft categorizes as MVPs or Most Valuable Professionals.[183] MVPs, are the highest social scaffolding in the user stratification of that software company. They are experts in Microsoft environments who, driven by their passion, help the company stay updated and maintain its market share and profit. They are not formally hired by Microsoft, nor do they get paid, but they receive other benefits and the status that comes with it.

For engineers, their experiment in placing Bimmers in the peripheries where they want their technology to work required training a type of expert users. These users, by assisting final users with transactions in Bim (which they perform on behalf of them and for monetary incentives), elevate Bim's 'transactionality' and spread its word. Bimmers thus, are distinct both from final Bim users (the clients of the shops in which merchants act as Bimmers) and from agents (such as banks and telecoms agents). Interestingly, all these last-mile human infrastructural forms (Bimmers, banks and telecoms agents) can coexist and function through the same person.

In the next section, I describe scenes from the field while accompanying the Bim advisors in their daily tasks and visits to shopkeepers to convince them to become Bimmers, and back to PDP headquarters to report their weekly tasks to engineers. Bimmers were expected to generate 'transactionality' for Bim in exchange for monetary incentives. As we will see, in practice Bim

[183] https://mvp.microsoft.com/en-US/mvp

advisors were more than just promoters advertising a mobile money system. For Bimmers to make transactions, they needed to convert their money into digital tokens first, and Bim advisors provided that service for them. Although not originally intended, they ended up systematically working as points of conversion for the shopkeepers. In doing so, Bim advisors became one of Bim's critical last-mile infrastructures: they were another set of Human ATMS or 'Human Teller Machines,' but mobile ones, going around on foot supplying mobile money to the shopkeepers so they could, in turn, be the stationary HTMs for the conversion of money from cash to digital for their unbanked clients.

Bim advisors and Bimmers: Mobile HTMs and Stationary HTMs

In the botica el Angel, Eduardo waits patiently for Martín, the shopkeeper, to finish serving his client before resuming their conversation about Bim. The small drugstore is located on the outskirts of the city of Lima, in a busy avenue where street vendors roam in search of clients, and passing minibuses or combis and mototaxis call out passengers to ride in. Eduardo, a Bim advisor, and I, acting as his assistant, have been walking around this area since 8 am in full brand gear (hats and collared t-shirt with Bim's logo and name badges) visiting shopkeepers to convince them to join as Bimmers.

This is the fifth store we have visited today. It is February, the middle of the day in the height of the summer, and the characteristic drowsiness of the hot and humid weather fills the air. As we wait, I get distracted observing the urban landscape outside the store, where brick buildings of all shapes and sizes proliferate, each bearing the marks of self-building practices (see Figure 4.3). As they rise through time, each floor is constructed a bit differently (styles, materials, paint, window finishes), depending on available resources, and often by a different member of the family.



Figure 4.3 A view of the street from the botica el Angel, San Juan de Lurigancho, February 2017.

There is no natural shade on the street, with very few and young trees nearby, and people walk around stopping to chat with vendors as they purchase something to eat or drink in their stalls on the sidewalk. Some ask for prices to an *ambulante* (a street vendor, ssomeone peddling merchandise) while they look and feel the shirts and pants he is offering, others top up their phones with some airtime for messaging, calls and internet usage at another ambulante. They all pay in cash, con *sencillo* (with change). Inside the botica, Martín's client is accompanied by a young child, and they both wear colorful shorts, short sleeve t-shirts, and flip flops. After purchasing a couple of diapers which Martín sells by the piece and topping up her phone for 5 soles (less than 2 US dollars at that time), the client and her child leave the store.

Bimmers, cellphone top-ups and monetary incentives

Eduardo and Martín resume their conversation. Eduardo explains that if Martín accepts to become a Bimmer he could earn one *sol* (Sol—which means Sun—is the national currency of Peru) as a commission each time he tops up phones of his clients using the Bim interface in his cellphone, and regardless of the amount the clients choose for topping up their phones: "*la comisión* is the same if they add just three soles or twenty, and Bim works with most mobile companies like Movistar, Claro and Bitel." Martín, a pharmacist dressed in a spotless white shirt with a red collar and equally red name embroidered in the shirt, looks interested, though he takes his time to formulate questions. Right now, he needs several basic cellphones to top up the cellphones of his clients. Each of the phones is connected to each telecom company for which he acts as a top-up agent (*Agente de recargas*).

All telecom companies pay similarly low commissions, between 4.5% and 5% of the total amount of *recargas* (top-ups). That means, as he describes to us, that he earns higher commissions depending on the total value toped up, "for instance, for each one hundred soles, I get one hundred and four soles and fifty cents, or one hundred and five soles depending on the company". The average client tops up their phone with five soles. It takes Martín about twenty top-ups to reach one hundred soles and the earns five soles in commissions in return to this service as agente de recarga. With Bim, instead, if he makes twenty transactions, regardless of the amount of each, he will earn twenty soles in commissions, one sol per transaction, which is four times more than what he makes now.

As I have learned from my visits to several corner shops in the area, being an agente de recargas on behalf of telecom companies is not good business, but merchants do top-ups because providing the service—in high demand in low-income day-by-day economies—attracts clients to

their stores. The engineers designing Bim's infrastructure as a mobile money wallet accessible on basic cellphones (with no internet connection) are familiar with this situation; that is why they have chosen this high introductory incentive for top-ups via Bim. The engineers expect this monetary incentive to be the hook to quickly gather a critical mass of shopkeepers on board to act as Bimmers—or VIP Bim users that promote its use among its clients. The mobile money system they have designed and that is now ready – "in production," to use their terms—desperately needs these Bimmers in order to work.

None of this is part of the explanation that Eduardo gives to Martín. His conversation orbits around Bim as a new *billetera móvil* (mobile wallet) in the market that is "interoperable," meaning it works to send and receive money between phones regardless of their operators: "if you have Claro and I have Movistar, we still can send each other money without additional fees." But mostly, the conversation is about the commissions for top-ups and how he, as a businessperson, can benefit from its use.

Martín takes a pause to consider this attractive commission offer, he seems to be wondering where the trick is, as the offer seems too good to be true. Would he trust Eduardo and, by extension, Bim? Prior to our visit, Martín had never heard of it. While Bim was launched almost exactly a year before that day, in February 2016, it is not yet a known brand or business. Consequently, to accept the offer means to take a financial risk; choosing to try Bim is a high-risk investment which promises an equally high return. But there is no contract involved; he can start and stop whenever he decides to, can't he? Will Bim become another service that, after this high introductory incentive, normalizes to a 4% commission like top-ups for telecoms? With high demand, will he be hooked to continue doing it even if it is not lucrative for his business?

His considerations are interrupted by a couple more clients, both coming to top up their phones. After attending to them, he meticulously writes down the details of the transactions in a

notebook, as he also did with the previous top-up client. This transaction record helps him anticipate the total amount he'll receive as commissions per period from each telecom company. It also serves as supporting evidence should he have a complaint with *las distribuidoras*—the third parties that manage top-ups for telecom companies—if he receives less than expected. *Las distribuidoras* go around shops *pre-topping-up* the cellphones of their agentes de recargas with airtime in exchange for their cash, so the agents can, in turn, top-up the phones of their shop clients in exchange for their cash and receive commissions.

These third parties of the telecoms often take the form of men who periodically visit the stores with a cellphone topped up with airtime to distribute among shopkeepers, collecting cash as they go around. This is similar to what the Bim advisors do now, though the latter team is composed by young men and women. In time, I came to understand the Bim advisors as a borrowed figure from the *agente de recarga -distribuidoras* relationship, for other purposes: that is, to bring the cash that circulates through these shops at the edges of digitized economies to banks…and away from telecoms.

Interestingly, banks participating in the partnership that created Bim were attempting to bring this cash to their ecosystems and away from telecoms while still using the telecoms' infrastructure. Unlike with smartphones and their internet-based Apps, in basic cellphones, money is converted to digital via telecommunication channels controlled by telecoms like SMS and USSD. In the field, Bim advisors were attempting to bring shopkeepers to work for Bim as Bimmers, and away from *las distribuidoras…* while still using the telecoms' infrastructure.

Once the new group of clients leave Martín's shop, the conversation resumes, with Martín asking when and how he would receive the Bim commissions (see Figure 4.4). Eduardo replies that every month they will be added to his balance on his Bim wallet, and asks him, in return, if he would like to get enrolled as Bimmer and try it out. Martín replies that he would with one hundred soles

(equivalent to 30 US dollars) as initial funds or investment to top-up phones via Bim. Eduardo receives the cash and asks if he can help Martín open a Bim account in his basic cellphone to finalize the set up as Bimmer. In every store where I have witnessed this enrollment process, the help translates into the shopkeeper handing their phone and national ID to the advisor who proceeds to register them on their behalf. Here too, Martín hands his phone and national ID to Eduardo so he can complete the registration steps while Martín returns to tending to his customers: he sells two Panadols (the Peruvian Tylenol), a toothpaste, a bar soap.



Figure 4.4. Eduardo, a Bim advisor, in conversation with Martín, trying to convince him to enroll as a Bimmer. Botica El Angel, San Juan de Lurigancho, February 2017.

In the repetition from shop to shop of this procedure—closing the deal by handing the phone and ID to the advisor—I recognized a gesture of trust, albeit momentary and pragmatic, since merchants give access to advisors to two of the most personal devices of contemporary times (and the data that comes with them), trusting that they will only be used for the intended purposes. It is

pragmatic because it seems to stem from a calculation in which the merchant rightly assumes that the advisor knows the system they are promoting better than they do. But by extension, the advisor is also presumed to have a higher digital literacy, as if they knew every basic cellphone model and its keyboard navigation across menus, that would make the process faster and more efficient. Merchants observe advisors performing the steps and learn from them.

With the merchants who agreed to enroll as Bimmers, it seemed to me that there was an expectation to earn money but also to learn how to operate a new technology with the help of advisors. It is the beginning of a relationship among humans, their phones and cash, a relationship functional to the digital system and necessary for the digital to work. Yet, in time, and through these recurrent visits, it becomes more than that, a community of practice, with its routines and shared tools and languages, proximity and trust among its momentary members. Bim advisors provide customer support to them, and shopkeepers confide, for instance, their complaints about telecom systems' break downs when they do top-ups ("se cayó el sistema"), and the problems these issues generate with their clients, affecting their credibility and the commissions they receive.[184]

After registering Martín as a new Bim user, Eduardo hands him back his ID and proceeds to top-up Martín's new Bim wallet with the one hundred soles Eduardo just received in cash. Eduardo puts the bill in his physical wallet, which goes right back to his pocket and transfers from his own Bim digital wallet the equivalent amount to Martín's Bim wallet. Martín receives an SMS message confirming the success of this transaction: now he has a hundred soles in his newly opened Bim wallet. After explaining to Martín how to access the Bim menu in his phone and which options to tap to do top-ups for clients, he is ready to start using it. At this point, I am also ready to leave and have gotten already two glasses of freshly squeezed orange juice for Eduardo and me, from a little stall

[184] Not sure what I want to say here. Not a transactional community as Lana Swartz develops but maybe think with her. Something that exists in practice, no attachments. It is a transaction although the relation may not be transactional.

just outside the botica, one sol each glass, paid in cash (Figure 4.5). Before leaving though, Martín asks a very important question: "How can I access that money if I want it back in *efectivo* (cash)?" Eduardo tells him that he can both add more money to his Bim wallet or cash it out at a bank or at a bank Agent (*Agente BCP*). I listen to that explanation with some skepticism, while sipping my orange juice.



Figure 4.5. Outside the Botica, street vendors sell homemade food and beverages (chicha and orange juice). The umbrella with Entel's logo (a telecom) signals one of the merchants as a top-up agent as well. San Juan de Lurigancho, February 2017.

Banks' correspondent agents

I have been hearing from the Bim engineers themselves at Modelo Peru headquarters in another part of town—which had no self-built edifices but high-rise towers and fewer street vendors—the ordeal that it is for them to deal with banks, particularly the largest ones which are both

main investors in Bim and the ones with the largest networks of Agents in the country. The engineers, who were not initially in charge of direct marketing strategies on the field for the use of Bim, often complained about how *los señores bancos* (the bank bosses or banklords) hadn't trained their agents to function as cash-in points, and even worse, they hadn't developed the technical part to work as cash-out points for Bim.

In the terms explained by the engineers, Bim needs what they often referred to in English as "cash-in" and "cash-out" points. In accounting and banking, "cash-in" and "cash-out" are frequently used terms to refer to cash flows in a business: "cash inflow" refers to money coming in, while "cash outflow" refers to money going out. Here, these terms specifically denote the entry and exit points required to convert cash into digital currency to enter the mobile wallet system, and vice versa to convert it back into cash when leaving the digital wallet. The general expectation from Bim creators is that once money enters, "it never leaves" but remains circulating within the "ecosistema digital" (digital ecosystem) they are still in the process of creating. This ecosystem, which may or may not develop as envisioned, will allow users not only to send and receive money from other users and do phone top-ups, as it does right now, but also to pay bills, taxes, and other services.

From the perspective of users, however, money must be able to leave the system (converted back into cash form), if they are to trust Bim as a system for their money. While the cash-in function is ready at the bank correspondent agents spread throughout the capital city and towns around the country, the cash-out function is taking more time to develop, much to the frustration of the engineers.

In areas which lack bank offices, like the one where Botica El Angel is, banks select some shopkeepers to act as their *Agentes corresponsales* (correspondent agents). In similar arrangements to those of shopkeepers who perform phone *recargas* for their clients on behalf of telecom companies in exchange of *comisiones*, bank agents receive small incentives for services provided on behalf of

the banks. Bank agents provide a more varied range of services than those shopkeepers acting as top-up agents for telecoms. They facilitate these services not through a basic cellphone but through point of sale (POS) equipment. Through their relationship with banks and with the help of these technological devices, shopkeepers are enabled to receive payment for services from their clients (such as electricity, water bills), perform phone top-ups, conduct money transfers (like Western Union), and deal with deposits and withdrawals. The last services, however, are available only to those clients of their shops who are also clients of the bank that the shopkeepers represent.

Just like with the agentes de recargas, here too shopkeepers provide services on behalf of banks without being formal employees of the bank. They are not paid according to the time they dedicate to this task but per commissions that vary depending on the type of transaction performed. Also, while practically any shopkeeper can be an Agente de recarga for a telecom, fewer merchants are Agentes corresponsales for banks. The list of requirements is longer for the latter: they need to have a bank account with the bank they will be representing, along with more infrastructure (such as a stable internet and/or phone line connection), and the skills (literacy, if you will) to perform more tasks.

The shop that is also a bank agent is often the biggest or most established shop in a low-income neighborhood, street, or small town. This distinction thus feeds hierarchies among shops and shopkeepers, signaling those who are bank agents as having a higher socioeconomic status than the rest. However, the relationship between banks and merchants is not exclusive, as it is not a formal (contractual) labor relationship. Therefore, merchants who are agents of banks are often also agents for telecoms, like Uber drivers who also work with Lyft. This ‘freedom’ and ‘flexibility’ of work regimes is only apparent to those who are not in that situation. In the field, merchants seemed rather resigned to this precarious and sticky state of affairs in which it seemed that their only choice was to

accept these tasks on behalf of telecoms and banks, as more clients go to shops that also offer these services (see figure 4.6).[185]



Figure 4.6. The small shops ecosystem through which the Bim advisors circulate every day in a neighborhood in Lima Norte. On the left: a drugstore in which the shopkeeper is a telecom agent (Agente de recargas virtuales). At the center: a shop (bodega) in which the shopkeeper is a telecom agent and a Bimmer. On the right: another drugstore in which the shopkeeper is a BCP bank correspondent agent, (agente corresponsal), a telecom agent, and a Bimmer. Lima, July 2019. Photos by the author.

Settling a community for Bim by unsettling existing networks of telecom agents

When we were doing our rounds, the option to perform cash-ins for Bim through bank agents had finally been launched. Yet, it is not that people are asking for this kind of cash-in service. Bim and mobile money alike are mostly unheard of in the places we were walking that day. There are no reasons (or use cases, in the engineers' terms) for people to go and ask for Bim cash-ins at agents. When 'unbanked' people need to pay their bills or send money to family or friends, they go to bank agents to do so or to Western Union type of services (though these are more expensive). When they need to top-up their cellphones, they go to telecom agents; sometimes the same neighborhood shopkeeper acts as both an agent for the banks and for the telecoms.

[185] Matilde Cordova Azcarate 2020 and stickiness of some practices and racial-social labor hierachies. And tourism

Bim promised and was infrastructurally ready to perform all these functions: sending money from person to person, doing phone top-ups for the users and others, and soon it was going to serve for paying some bills and services and even some types of taxes. [186] Bim could handle functions for both banks and telecoms as it was done through a system that connected both. To me, however, the digital money and communication needs of people in the peripheries of the city where Bim was designed were already met with the available options. The abstract space of "the cash economies of the unbanked", was in practice not at all empty—or 'not served'—by the digital but served otherwise by the already existing networks of bank agents and top-up agents. How, then, to carve a space for Bim in this highly intervened space by both banks and telecoms?

Bimmers seem to be the answer for the engineers: a figure they do not imagine as cash-in points or agents, but as a higher level of user (like Microsoft's MVPs). A VIP user who, in turn, promotes Bim's use among its clients. Engineers explained to me the Bimmers as a temporary seeding strategy to elevate transactions in Bim. It was a very technical explanation that in my rounds with Bim advisors in the field translated into trying to convince shopkeepers who were already telecom agents (not workers, not formally, but through incentives) to become Bimmers. That is, to offer a service (phone top-ups) that people need and that these merchants, in their role of telecom agents, already knew how to perform through the telecoms' interface, but through Bim and with significantly higher incentives than those offered by the telecoms.

Bim advisors were thus carving out a space for Bim in what seemed to be the telecoms' territory and bringing it to the banks' control (Agente de recarga → Bimmer). They were settling a community for Bim in the form of Bimmers by unsettling the established telecoms and distribuidoras networks of agentes de recarga. While in theory these two identities (Agente de recarga for a telecom

[186] For instance a tax called RUS, a type of tax for people who are microenterpreneurs and only sell to final clients not to other businesses. Source: https://orientacion.sunat.gob.pe/nuevo-regimen-unico-simplificado-nuevo-rus

and Bimmer) could coexist in one merchant and also that of being a bank agent, I wondered how long that would last in practice without generating problems.

Initially, when this strategy was new, pilot-like and supposedly temporary, it didn't present a problem. For instance, when we were doing these rounds (February 2017), only 240 shops all located in the district we were in (San Juan de Lurigancho) participated in this Bimmer experiment.[187] But very quickly, these numbers escalated due to the high commission per transaction. By the end of March of the same year, there were already 1,111 Bimmers, 95% of whom were located in that same district.[188] Over time, as more merchants enrolled as Bimmers and performed phone top-ups for their clients through Bim to get higher commissions, the men representing the various telecoms' third parties or *distribuidoras* began threatening shopkeepers, demanding they stop working with Bim or face losing their business relationships with them.

At PDP's office, the engineers commented that this situation even escalated to higher management within the telecoms, as their field third parties complained that they were losing business because of Bim. Some telecoms, like Movistar, one of the largest in the country, responded by eliminating the option of doing top-ups for their phone lines via Bim, which translated in a change in the Bim USSD menu visible for users on their phones. Others imposed limits or caps on the amount that could be topped up per period through Bim. In my 2019 field visits, when Bimmers were more than three thousand distributed in different areas of the city and other regions of the country, many shopkeepers commented on that situation as we were doing our rounds; Bim commissions were not as high anymore and generated problems for them in their other networks of relations. Being a Bimmer *ya no sale tan a cuenta* (it doesn't pay off as it used to).[189]

[187] PDP numbers for end of January 2017, comité operativo, February 2017.
[188] PDP numbers for end of March 2017, comité operativo, April 10, 2017.
[189] PDP reported 3,225 Bimmers at the comité operativo of July 15, 2019.

But that is yet to come. Back in February 2017, engineers expected Bimmers not only to generate transactionality via top-ups but also through the request of cash-ins at bank agents. Their action would not only get money into the system but also train the bank agents in performing Bim cash-ins for clients. For example, while Martín's botica is located on a main avenue in that district and is relatively large in comparison to other boticas, it doesn't operate as a bank Agent. So when we met Martín, he only performed cellphone top-ups; he was a telecom agent but not a bank agent. After our visit, he started to work as a Bimmer as well.

Now enrolled as Bimmer, Martín has some funds to do top-ups (one hundred soles that Eduardo just funded him with in exchange for his cash). Once he runs out of these funds, he will need to leave his shop unattended to go to the closest shop operating as a bank agent to exchange his cash for digital tokens uploaded to Bim in a cash-in operation. At the time of our visit though it was unclear where he should go should he need his money converted back into cash. Bim advisors were thus unsettling the community of telecoms, distribuidoras and agents to settle a community for Bim simultaneously as Bim engineers were still negotiating with the banks and figuring out some of the nodes of its infrastructural form, particularly the exit points of it, crucial for trust. Because those points were not ready yet, these human intermediaries (Bim advisors) and their systematic presence visiting shopkeepers were temporarily providing that trust (in the form of human faces and their word).[190]

Bim Advisors: Mobile Human Teller Machines (M-HTMs)

A couple of days later, Eduardo and I visited Martín again. We were not supposed to see him that day as we had a different list of small shops to visit, but Martín had called Eduardo a couple of

[190] Cash outs in these early days usually required users calling the Bim customer support center to initiate a withdraw from their accounts and that could take days to process. Bim advisors help Bimmers with those calls as well.

times and insisted that he stopped by. Martín's initial one hundred soles as digital tokens in his Bim wallet had run out quickly, with the many recargas he did for clients via Bim. This meant, as he enthusiastically put it, that he had already earned more than twenty soles in commissions! The problem was, he told us, that he was unable to re-fund (*re-fondear*) his Bim walled at the closest *Agente BCP* (a shopkeeper acting on behalf of the largest Peruvian bank- BCP), as Eduardo had instructed him, because the bank agent was not familiar with Bim. Martín didn't have time to look for another Agente nearby, and he couldn't leave his botica unattended again, risking the loss of potential business.

Martin's experience confirmed the engineers' unease, bank agents were only slowly getting acquainted with this new service they were supposed to provide on behalf of banks, and it was unclear to them what kind of commission they were supposed to receive for it. Unsurprisingly, they were often reluctant to fulfill these types of requests. The Bim function was new, and both procedure and commission were unclear, thus, the cash-in service was not available when Martín requested it.

Martín was nonetheless eager to keep working with Bim while this high introductory monetary incentive lasted. He told us that he had also mentioned this to some family members who owned another shop in the area and were also agentes de recargas and they wanted to coordinate with us on when to visit them. A similar situation happened in the shop we visited right before Martin's. A merchant had made her sister come to her store to meet us on our regular visit. The sister worked as an agente de recargas *ambulante* (street vendor, not from a store but just standing and walking around) at Gamarra, a large informal market of clothes and fabrics, somewhat far from there (at least an hour in public transportation). She had a good nose for business, so she came right away to be enrolled as Bimmer. The Bim advisor strategy of an attractive commission for top-ups seemed to be working, at least in the short term. It was spreading out the word of Bim among merchants, though it

seemed that they saw Bim more as an opportunity to make easy money while it lasted rather than as an interest in the possibilities of a mobile money ecosystem beyond top-ups.

This time Martín wanted to top-up his Bim wallet with two hundred soles (around sixty US dollars)—he was doubling his initial bet. That is why he had insistently called: because the bank agent option didn't work, he was wondering if Eduardo could serve as an entry point for digital money for him, like last time. He wanted to give Eduardo his *efectivo* (cash) in exchange for digital tokens sent to his Bim wallet. Eduardo, however, didn't have that amount available in his personal Bim wallet. Eduardo called his immediate boss, Dylan, in charge of the team and strategy of Bim advisors, so he in turn could request that funding from the central office (PDP)—or perhaps he would just send him the money from his own Bim wallet and keep track of it. Once Eduardo received an SMS message confirming that he had two hundred soles in balance in his Bim wallet, he received the cash from Martín, put it in his physical wallet, and transferred the same amount in digital from his Bim wallet to Martín's wallet, in what Bim engineers routinely called a P2P or person-to-person transfer.

This type of situation—enrolled merchants as Bimmers asking Bim advisors to cash-in money for them so they can use Bim with their clients—repeated on the field many times back in 2017. While in practice, one of the main functions of Bim advisors was to go around supplying digital money to Bimmers in exchange of their cash so they could perform a similar function with their clients, this aspect was not formally considered in explanations about how mobile money worked. Instead, the official discourse of its proponents (engineers included) reproduced the abstractions of their diagrams of the 'architecture of the system'. In that discourse, mobile money started with the merchants, like Martín, acting as agents (cash-in points) or HTMs (Human Teller Machines) for Bim, and not with the Bim advisors' acting as agents of the agents providing digital

money in exchange of their cash. Bim advisors were, in practice, like mobile HTMs going around supplying the shops' stationary HTMs.

After visiting Martín that day, Eduardo and I went to several other small shops. Some visits are shorter, not everyone is interested; some merchants tell him that they need to talk about it with their husbands or partners, or that they will think about it and that he can come back some other day. It is a very hot summer with extreme weather due to the El Niño phenomenon. Though the sky is clear in the location that we are in, there is heavy rain in the Andean mountains causing mudslides (*huaicos*) that can sometimes reach the streets that we are walking on; they did, in fact, just a week before. We are in Lima Este, the city's east side, where the hills (*cerros)*—extensions of the Andean mountains from east to west towards the coast—are visible at the end of the Avenue we are walking on. The marks from the mudslides are still visible in the street, now completely dry and dusty.

In our field visits, we not only visited other shopkeepers, but at least a couple of times a day we went on the search of bank agents, specifically of Agentes BCP (from the largest bank and the most ubiquitous ones). Eduardo, like the rest of Bim advisors, needs to deposit the cash he receives from shopkeepers back into the system through his Bim wallet, only to use it again in digital form to supply other Bimmers. Bim advisors were not only visiting shopkeepers to enroll them as Bimmers and monitor their work but primarily, it seemed to me, to supply them with digital funds in exchange for their cash, enabling them to act as top-up providers for their clients and not so much as advertisers of Bim enrolling new users in turn. Once Bimmers were established, Bim advisors were more like mobile HTMs going around supplying the shops' stationary HTMs rather than marketeers of a new technology. Bim advisors then had to regularly visit bank agents to deposit the collected cash into their Bim wallet accounts, allowing them to continue their rounds (See Figure 4.7).



Figure 4.7. On the left, Bim advisors are looking at their phones for the nearest BPC bank correspondent agent to refund their Bim wallets, while standing in front of a closed shop that also serves as a BCP agent (see orange and blue sign in the ceiling). On the right, a Bim advisor waits in line to make a deposit (re-fund) through a BCP bank correspondent agent inside a different shop. San Juan de Lurigancho, February 2017. Photos by the author.

In this way, Bim advisors not only trained Bimmers and supplied them with funds but also taught bank agents to perform cash-in operations using their POS equipment. Initially, the engineers envisioned Bimmers going directly to do this action, but in the day-by-day deployment of the Bim advisors as a strategy to figure out how to operate Bim in the places it was supposed to work, they realized that the cash-in was another 'last-mile' gap they needed to fill with the Bim advisors. They still imagined a future where Bim users, including Bimmers, could directly go to these bank agents to top-up their Bim wallets but now this vision was adapted as a step after an intermediate phase of Bim advisors doing that work (as mobile HTMs) on behalf of them. Bim advisors were thus training other intermediaries to eventually take over their roles, which were intended as a temporary solution. But were they truly temporary? Could the system work without them?

It turns out that it couldn't, at least before other factors such as the COVID-19 pandemic and its never-ending, military patrolled lockdowns transformed drastically the digital telecom/banking

ecosystems of these neighborhoods and the rest of the country—but that is yet to come.[191] By 2019 when I did another field visit, and before that dramatic transformation, the engineers in charge of designing and implementing the Bim advisors' strategy had long incorporated this cash-in (HTM) function to the advisors' routine tasks. The Bim advisors were less temporary and more structurally needed for Bim to properly function than the engineers expected, and I explore these aspects in detail in the next chapter.

Returning to that day in east Lima, our last visit to a shop is abruptly interrupted by a *Serenazgo* (local police car) with a megaphone, driving up and down the avenue, announcing that a *huaico* (mudslide) is coming our way. Rocks, water and mud were descending from the hills and would be soon flowing through the street. The officer is urging passersby, street vendors, and stall owners to clear the street and take shelter. The lady merchant we are visiting quickly rushes us out, while assessing with her neighbor, another merchant lady, what would be their best course of action. She chooses to close her store in hopes that the water doesn't get in. I am curious to see the approaching muddy water, but Eduardo convinces me to leave and get on a bus back to PDP headquarters.

Tracking progress: green light, amber light, red light

Bim advisors met every Monday at the end of their shop visits with Iván, the engineer who devised and directly supervised their work at PDP's headquarters. That day Eduardo and I went back to PDP headquarters, in rush hour traffic to meet the rest of Bim advisors and their supervisor, Dylan, the owner of Tambo, a marketing small business (less than five permanent employees), that PDP engineers hired to conduct the Bim advisors' strategy on behalf of them. In table 1 we can see all the

[191] See chapter 3 on Yape and Plin and unintended Covid-19 collaborations with mobile money.

intermediaries that I have been describing so far. In blue, we can see the highly intermediated structure of the partnership of banks (with PDP, Tambo and the Bim advisors). Bimmers, bank agents and telecom agents, are one way or another are being used by the engineers and Bim advisors for Bim to take off (as points of access and generators of transactionality).

Entity	On behalf of
Banks agents (Agentes corresponsales)	shopkeepers who act on behalf of banks for monetary incentives
Telecom agents (Agentes de recarga)	shopkeepers who act on behalf of telecoms for monetary incentives
Bimmers	Shopkeepers who act on behalf of Bim, PDP, and the bank partnership for monetary incentives
Bim advisors	hired by Tambo to act on behalf of PDP by enrolling and providing cash-in services and support to Bimmers
Tambo	the small business that acts on behalf of PDP recruiting and managing the Bim advisors' strategy in the field
PDP or Pagos Digitales Peruanos	the company that acts on behalf of a partnership of banks and where the engineers work

Table 1. A local ecosystem of shops and merchants acting on behalf of other entities, some of which also act on behalf of yet other entities.

In a meeting room with dimmed lights and a TV screen, Iván greets the Bim advisors team as they enter the space: "¿Cómo están chicos (How are you guys)? ¿Están Bim?" Instead of asking them if they are feeling good (in Spanish, "bien"), he replaces bien for Bim, pun intended. In these meetings, we all seat around a rectangular table and first listen in silence while Iván presents these numbers. Then the advisors report back to Iván events, issues and suggestions from their interactions with shopkeepers.

On the TV screen, he first shows Bim's general transactional evolution for the previous month and the trend for the current month in an Excel sheet. January 2017 closed with a record of sixty-three thousand transactions. The last update was on February 10th, three days before this meeting, and it already shows sixty-eight thousand transactions. "February's projection is eighty-four thousand transactions, but I want one hundred thousand," he says, in motivational tone.

For Iván, the idea is to compare how these numbers and types of transactions are growing steadily as a direct consequence of the Bim advisors' visits. And these numbers grew and grew, week by week. Iván comments that there has been a reorganization of the strategy by areas in San Juan de Lurigancho's district (east Lima) where this pilot is being tested and studied. Advisors will be assigned to specific areas and given portfolios (*carteras*) of specific shops within those areas.

With this geographical distribution, Iván explains, they will have portfolios of clients whom they will be able to get to know better, understand how they behave, identify who needs to grow in transactions, and who needs to maintain their levels. They will then report their findings back to him. Currently, there are about two hundred and fifty to three hundred Bimmers, all in San Juan de Lurigancho, and seven Bim advisors catering to them. The Bim advisors are a group of people in their early twenties, some working and studying at colleges or institutes (technical crafts) simultaneously. As the strategy grows, Iván expects the portfolios of each advisor to grow up to one hundred clients. "Es lo manejable" (it is manageable/doable), he asserts.

To better monitor this new geographical distribution and its expected productivity both on the side of the Bimmers and of the Bim advisors, he introduces a "new methodology." He uses a *semaforo* (traffic lights) color system to make his findings more visual for the team of advisors. Red is for the Bimmers who are not using Bim after being enrolled; amber for those who are using it but could perform better; and green for the 'Bimmer stars'. The same general classification is then distributed on a different Excel table according to the shops and locations assigned to each advisor. If

an advisor has too many red lights on their list, they also need to work harder, not just the Bimmers (see table 2). These tables and color methodologies not only conveyed useful information to map Bimmers' behavior, track the incremental success of the Bim advisors' strategy, and guide the next steps in its deployment. As the tables were socialized with everyone in the room, including me, they also worked as a powerful social disciplining device for the Bim advisors themselves, singling out those with poor performance.

Number	Colors	Top-ups per month
1	Dark Green	More than a thousand
2	Green	between 500 and 1000
3	Amber	between 100 and 500
4	Red	between 30 and 100
5	Strong Red	Less than 30

Table 2. The new methodology of the traffic lights to evaluate Bimmers and Bim advisors' performance alike.

Like the rest of the engineers hired by PDP, Iván is an *ingeniero con experiencia* (an experienced engineer). Like the rest, he has built, delivered, and managed other systems for the individual banks he has worked for prior to this shared mobile money system for a partnership of the banks. Unlike the rest, (or perhaps, more than the rest), Iván is what in Lima would be considered as an engineer *que tiene calle*. The expression literally means 'to have street', that is, to be street wise, and it implies someone is a seasoned professional with firsthand knowledge of the cash economies this bank partnership is set to intervene. Iván proudly told me that back in the day, around 2005, he was in charge of starting the Agentes corresponsales strategy at the largest bank (BCP), long before working for Bim.

He considers himself more of a field engineer than an office engineer. Although he now spends more time at PDP headquarters than in the field, overseeing the Bim advisors' strategy, he

routinely visits successful Bimmers to understand what is working and what is not. He also explores other areas of the city and elsewhere in the country to examine the conditions for deploying another Bim advisors' field experiment.

Bim advisors' is a strategy of limited scope, or as the engineers called it *un experimento* (an experiment) and other times "a laboratory" or "a pilot". PDP has a meager budget for marketing tasks that Iván administers well. He knows that is risky to have such a high incentive: if the strategy succeeds, and many Bimmers actively use Bim for cellphone top-ups with a one-sol commission per transaction, PDP will run out of funds quickly. His bet is that banks will see the benefit of it—translated in higher numbers of active Bim users and money circulating through its pipelines—and will chip in more money for the cause.[192] He has even promoted the Bim advisors to act as Bimmers for their own family and friends' circles, as a win-win strategy: Bim advisors can generate some additional income with the commissions for top-ups while they help elevate quickly the numbers for Bim to keep the board of directors interested on it.

Iván announces that beginning in March, the incentive will be reduced to 40 cents instead of one sol per transaction, which is still much higher than what merchants earn by doing top-ups for telecoms. Yet, Bim advisors look concerned. They will need to announce this to their portfolio of Bimmers during their subsequent visits. The atmosphere in the meeting has turned somber, the energy has sunk, due to the new semaphore surveillance and this cut in commissions for Bimmers.

But a seasoned engineer like Iván, who comes off as serious, strict, and yet curious and challenge-driven, senses it too and has ways to lift the spirits again. He opens the floor for questions and comments. I notice that often women advisors remain silent, even though the advisor with more greenlight shops identifies as a female. One of the male advisors mentions that a distribuidora, which

[192] Bim, as explained by people at PDP, at that time supported itself with capital contributions and not monthly clearly defined and stable amounts, which makes it more unstable.

provides services for Claro (one of the largest telecoms), gives merchants a monetary incentive at the end of the month for top clients. “Because these providers pay so little in comisiones, about five soles per month, if the bonus incentive is like twenty to eighty soles, the shopkeepers see it as wow!” He wonders if Bim can do the same.

Iván’s first reaction is to repeat the mantra, “there’s no budget for that.” But then he starts pondering it (and calculating costs, it seems) and asks some follow up questions. He then presents his ruling on the matter: advisors can announce to their portfolio of Bimmers that there will be twenty soles (seven US dollars) for every Bimmer who performs one thousand or more top-ups by the end of the month. The best part is that he proposes a thirty soles (about ten US dollars) bonus for the two best Bim advisors with the most Bimmers in greenlight status at the end of the month. The mood relaxes, and the conversation becomes more horizontal as Iván and the advisors negotiate the details of these spontaneous announcements.

In this back and forth from the field lab and the office, Iván and his colleagues tweak the Bim advisors’ strategy, and incorporate what works and replace what doesn’t. They are both experts that can immerse themselves in abstractions and diagrams planning the futures of money as well as bricoleurs, adapting to the resources and materials available and tinkering their models (see Harvey and Knox 2015). That day, for example, another advisor commented that las distribuidoras go to each shop to pre-top-up the phones of merchants (“los recargan de saldo”) in exchange for cash, so they can perform the top-ups for clients. But with Bim, merchants have to go to an Agente BCP and do a cash-in themselves and often bank agents don’t know what to do, or they ask them (the advisors) to do the cash-in for them. In time, the function of Bim advisors as mobile HTMs became part of the daily routine of the advisors because of feedback Iván received in these meetings and in comparing the feedback and what the numbers were showing.

For instance, the sixty-eight thousand transactions that Iván mentioned at the beginning of the meeting that day were broken down as follows: sixty-one thousand top-ups and seven thousand cash-ins. The difference between the many top-ups and fewer cash-ins, as Bim advisors know and I do too because I walk with them, corresponds to the way the Bim advisors operate in practice. Even though at that time Iván had not yet incorporated it as one of their tasks with its own daily budget that the advisors' received in their Bim wallets every day before starting their round to work with on top-ups, each advisor was already operating as such. They were not just intermediaries performing the tasks they were expected to, but through their actions they mediated what they considered necessary for the system to work. They were acting as cash-in mobile HTM for many shopkeepers providing them with funds to perform top-ups for their clients (sixty-one thousand in that period) in exchange for their cash. Then the advisors, who in their rounds centralize the cash from many shopkeepers, go to bank agents to perform in turn, few cash-ins (most of the seven thousand performed in that period), to feed the Bim system back with digital money.

Later this task was incorporated in the Bim advisors' daily routines with budget included, as I will discuss in the next chapter. Although this incorporation effectively transformed them into necessary human-with-phones-and-cash last-mile infrastructure for Bim—acting in practice as cash-in points—they weren't necessarily added as a figure of the engineers' more formal diagrams on how the technology worked, and I will return to this point shortly.

By focusing on high commissions for airtime top-ups through Bim, the Bimmers' strategy was carving a space for Bim in the telecoms' business. Telecoms were not partners of Bim; they were providers of mobile services (SMS and USSD channels) and charged the banks per transaction performed via Bim through their infrastructure. Banks were paying fees to telecoms while they were experimenting with Bim, and Bim was a system that allowed them to have access to understand in practice how the telecoms' infrastructure worked. It allowed them to open the telecom black box; but

it seemed that not only in terms of what the engineers considered the properly digital (SMS and USSD channels) but also the black box of the extra digital realm, that of the distribuidoras and their commissions and incentives.

In the field, the Bim advisors were settling a community for Bim by experimenting with commissions and incentives borrowed and improved from their observations of the telecoms agents collected in these meetings, effectively unsettling the established telecoms and distribuidoras networks. The issue with top-ups and *distribuidoras* feeling threatened by Bim and taking retaliation actions with shopkeepers was, for instance, also discussed in this space at a later date.

Before we leave the meeting, Iván reminds us that the goal is to incrementally move towards reaching one million soles in transactions by a specific deadline, which I cannot remember exactly, but it was a couple of months ahead of us.

Comités operativos and the banklords

An hour later, on a different floor of the same PDP building, in a larger room with equally dimmed lights, the *Comite Operativo* (Operating Committee) met. Representatives of all banks gathered monthly with PDP's head engineer, Margarita, to discuss progress in Bim's implementation, review its monthly statistics, its new software developments (such as new functions via Bim like 'pay your bills'), occasional regulatory adjustments, and any other challenges or topics related to their partnership deployment. While Bim advisors' meetings were weekly and committees met monthly, I was lucky that they coincided that day, allowing me to attend both.

Neither Bim advisors nor their direct supervisor (Dylan) participated in these meetings. Iván did. He prepared information for Margarita to present (such as number of transactions and of money per month, new users and active users' numbers, and comparative tables), and sat at a table next to

Margarita and another engineer to comment and reply to questions related to the Bimmers strategy should they arise. Margarita stood at a podium in front of the bank representatives seated in chairs facing the screen where she projected the information (Powerpoint slides, then excel tables). During her presentation, she welcomed questions from the audience.

The engineers at Bim's headquarters had been busy for months coordinating with counterparts from the various banks involved in this partnership but focusing mostly on the largest banks (BCP & Interbank) with extensive networks of correspondent agents. Their goal was to implement cash-in/out points for Bim through their correspondent agents. I participated in some of these meetings, introduced as a financial researcher from the University of California. Attending in business casual attire just like the engineers I was accompanying, I remained silent and focused on taking notes.

The engineers also coordinated with the international company that provides Bim's core wallet system, the coding and testing tasks required for the technological fixes needed on the banks' end (such as APIs and software updates). These fixes were crucial so that agents could perform operations for Bim through their POS systems in areas lacking bank offices, like Martin's neighborhood. However, when these technological fixes were finally implemented and accessible via the agents' POS, the banks failed to train their agents--this is how engineers explained it to me, as a lack of training, which produced as consequence that the agents were unable to provide the intended services. The engineers gathered the information of Agentes not knowing or not wanting to perform that service through their Bim advisors' strategy, which provided weekly and timely insights from the field. This situation was also highlighted during our visit to Martín's drugstore, where he reported to Eduardo and me that when he requested the service at an Agente BCP, the merchant had no knowledge about it.

After some months of immersion in the various digital practices of the shopkeepers and their day-by-day economies, which complicates any simple picture of unbanked vs banked, digital vs non-digital constituencies, I wondered if the issue was not so much one of technological training only (or necessarily). After all, shopkeepers as agents had been skillfully performing many financial and digital operations for the banks through the POS system for years—some even from mid 2000s. It seemed to me that one aspect that was missing in the picture. Perhaps along with other types of training and attention, the shopkeepers were expecting some explanation of the type of compensation (commission) they would receive for performing this new service on behalf of banks. After all, these tasks take time and energy and divert their attention from their main business.

The engineers were frustrated because while they succeeded in making the cash in/out function exist in the POS of bank agents, they couldn't make agents actually use it. As they explained to me, it was the responsibility of each bank –technically and financially—to train their agents in its use. Often and more widely, they complained about the banks (*los señores bancos* or banklords*)* for not taking care (*encargarse*) of the advertising and usage aspect of their mobile money partnership. Their hope in this particular meeting was to get their attention with the Bim advisors and Bimmers strategy in the hopes that they will *ponerse las pilas* (be more actively involved, in terms of resources, technical fixes, and presence in the field with their agents).

This conundrum was becoming increasingly familiar to them in the deployment of this project: that is, the distinction between making something exist as different as to make it function. These engineers were no newbies; they were hired because of their previous experience working with some of the partnering banks behind Bim. They took pride in their expertise and previous accomplishments within the banking sector. They were seasoned professionals. The specific and novel issue at hand for them here was not the banks but the 'partnership.' The engineers worked from the company called Pagos Digitales Peruanos (PDP) that the banks created together to execute their

partnership in the deployment of Bim. The partnership, as engineers explained to me, in its most basic form was a payment agreement (*un acuerdo de pagos*) between more than 20 banks participating. PDP acted on behalf of the banks to design and deploy Bim, the resulting mobile money system of this agreement and to oversee the settlement of transactions among the partnering banks. In short, they were in charge of building the digital infrastructure and of monitoring the money circulating in digital form within it. Lately, they were also in charge of advertising Bim so people could learn that this option was available to them. However, they didn't have a budget for national ad campaigns or extensive Bim advisors' strategies, so they focused on 'experiments' on transactionality such as the Bim advisors. Bim advisors' increasingly became mobile HTMs, a piece in the last-mile technological chain that the system needed rather than just promoters of a technology for digital money though.

When I say that the engineers' problem was not the fact that they were working for banks, (they had vast experience doing that) but rather with the 'partnership' aspect of it, I mean that the partnership weakened and distributed responsibilities towards Bim among banks. Some of those responsibilities were training Agents and advertising Bim, but they were not the only ones I witnessed in the field. This led to a situation where the largest bank, BCP, the one with the most Agentes all over the country (around eight thousand at that time), seemed to be waiting for another partnering bank to take the lead and show results before implementing cash in/out points through their own network.[193] Meanwhile, other partnering banks were expecting BCP, the one with the largest network, to take the lead. Because BCP the bank with most power to make this partnership work, was apparently taking this 'wait and see' approach, it was dragging Bim down, or more

[193] This seemed a sustained attitude towards the project, as engineers commented to me. BCP was the last one to join the partnership and mostly under the pressure of potential reputational damage if it was the only bank that didn't join and supported the financial inclusion goal both from the government and international development agencies.

specifically, not allowing it to take off. This is the bank that will later colonize the mobile digital payments space with its own, non-collaborative App for smartphones called YAPE, launched in parallel with Bim and in part modeled with the permanent lessons learned from it, as seen in Chapter 3.

The engineers told me that at the beginning, when Bim was a project and money through basic cellphones was still newish, committees were a lively space, with everyone collaborating and bringing ideas on how to develop this mobile wallet—how to reverse engineer M-Pesa, in my terms.

Because I started my long-term fieldwork, paraphrasing Bim's manager, "once Bim existed, so I could study it," I didn't quite get that impression of the committees. The format (Powerpoint presentation by PDP) and setting of the space (a podium facing an audience) didn't seem very participative. Rather, it seemed like PDP's periodic rendering of accounts, a check-in to see how things were going, the list of ongoing projects, and a reminder of work pending, with space for questions at the end. Then PDP will do one on one meetings with banks routinely as well for specific issues. Yet still, back in early 2017, like that day, it was important to see the general manager and the marketing manager also attending the meetings, saluting each bank representative individually (a kiss in the cheek for women as is customary, and a handshake for men) and seating in the back supporting the engineering team presenting, and addressing questions when necessary.

Increasingly, and especially in 2019, when the banks had also launched their own mobile money Apps, I felt that the Comite Operativo had turned into a space for banks to spy on each other. Sometimes it seemed like "*un saludo a la bandera"* (a salute to the flag, meaning merely a formal procedure without implying any real commitment). No general manager attended anymore as a gesture of support to their team—in fact, that year there was a gap in management, and PDP continued without its board of directors appointing a new general manager. The bank representatives attending changed frequently and seemed to be either younger hires or older representatives about to

retire, which communicated a reduction in the interest in this initiative on the side of banks. They were reassigning their teams to other projects and also some people moved from one bank to another.

Increasingly, it became a procedure that not even PDP's engineers enjoyed or were interested in. One by one they quit the project in the following years. The imagination of mobile money through cellphones with channels for money controlled by telecoms (i.e., like M-Pesa) that initially prompted the banks to unite to develop Bim back in 2011 was no longer a threat by 2017 and even less so in 2019. The banks' interest, preoccupations and bets for the future of money were already somewhere else.[194]

Peripheral technologies

The question of how technology operates in practice, far from the centers where it is conceived and into the peripheries where it is expected to be used is a classic one in the field of Science and Technology Studies. In contrast with the envisioned functionality of the system and its many intermediaries seamlessly performing what they are expected to perform, as portrayed in engineering and banking diagrams, my chapter shows that its actual operation is messier and necessitates a vast array of often overlooked humans-with phones and cash mediators.

For Latour, entities act as intermediaries or mediators and that behavior is not fixed but depends on each of the particular chains of associations in which they participate. While intermediaries, in his vocabulary, transport "meaning or force without transformation," mediators "transform, translate, distort, and modify the meaning of the elements they are supposed to carry"

[194] I don't mean to say that M-Pesa remained unchanged, on the contrary, it had also transformed in ways that exceed the scope of my work. The point is that the imagination of mobile money through cellphones controlled by telecoms that M-Pesa propelled and that initially prompted the banks to unite to develop Bim was no longer a threat.

(2005, 39). As I have described in my fieldwork scenes, the many entities (Bim advisors, Bimmers, telecom and bank agents, distribuidoras) acting on behalf of some other entity (banks, telecoms, PDP and the banks) can hardly be considered intermediaries. The interaction between them also changes depending on the situation. For instance, Bim advisors were initially imagined as promoters of the technology, and they ended up working as mobile HTMs. Las distribuidoras (going from shop to shop topping up the phones of agentes de recargas for the telecoms) were first unaware and not concerned with the presence of Bim advisors, but then they were in direct competition applying all kinds of tactics to protect their digital/financial territory which in turn affected the Bim advisors' strategy.

Anthropologists of money have already brought these Latourian concepts to think about mobile money, mainly in the case of the Kenyan M-Pesa, and the role that agents (like the Bimmers) play on it (Rea and Nelms 2017; Maurer 2012). For example, Bill Maurer, Taylor Nelms and Stephen Rea (2013) compare initial understandings of mobile money that didn't consider the *extra* digital realm of the cash economies in which the technology is supposed to work (like the PDP engineers' diagrams) with later understandings in which the effort to create and maintain networks of agents is considered critical to the success of mobile money. They comment that "person-to-person (P2P) money transfer – remains the primary use-case for mobile money" but that to call it that way (P2P) "is, however, a misnomer: the service depends on a network of human agents who serve as cash-in/cash-out points" and thus, "'P2P' always entails, so to speak, other Ps – or, rather, 'As', the mobile money agents themselves" (2013, 54).

Just as with the engineers I followed, in their research "the repeated lesson was that the 'infrastructure' was not, in fact, just 'there', ready-made, ready to be harnessed;" rather, agent networks "require constant investments of money, time, and attention" (63). In other words, they traced how agents, switched from being initially conceived as intermediaries (as simple 'human

ATMs'), "a piece in scaling up a mobile money service, already present in the existing market environment" to mediators and as matter of concern for mobile money professionals. Agents, in practice, performed many tasks which could fluidly include "from customer recruitment, account opening, and customer service to e-float management" to preventing money laundering by complying with Customer Due Diligence (CDD); they required training and monitoring and implied also major costs (64). Agents, in practice, were thus central in "making a mobile money service feasible and profitable" (Ibid.).

While the existing literature acknowledges that "it is not always obvious which components of the agent network can 'ride the rails' of existing infrastructures" as mobile money promises, nor is "always clear if an agent is acting as an intermediary or mediator or both" (2013, 64), it mostly focuses on the figure of the agent (the M-Pesa agent). In my case though, there is no equivalent to that figure but rather different entities partially covering that function.

On one hand, there are Bimmers, who are VIP Bim users (similar to Microsoft's Most Valuable Professionals or MVPs, as per the engineers' metaphors). While performing top-ups, they are somewhat performing cash-ins, but not exactly. Bimmers bring money to the system by offering a service to their clients through a different infrastructure than usual (via Bim instead of the telecoms). However, the clients in this operation do not become Bim users; they just receive the top-up in their phones as usual.

On the other hand, there are bank agents who are equipped to be Bim agents and perform cash-ins through the banks' POS. The issue is that shopkeepers acting as Bimmers can barely afford to add to their busy schedules and mostly subsistence business model the task of leaving their shops unattended in search of a bank agent to do a cash-in to continue to do top-ups for their clients.

Then there is a third figure, a supposedly temporary one bridging the other two: the Bim advisor. My work contributes to shedding light on the translation and mediation efforts of this figure that is also necessary. The Bim advisor operates in both directions bridging this infrastructural gap. For Bimmers, the Bim advisor is a sort of *mobile* Human Teller Machine (HTM) that feeds the stationary HTM of each bodega (that is, the merchants acting as Bimmers)—they are the supplier of the supplier. For bank agents, they act like the 'armored trucks' (*camiones blindados*) that transport money from and to banks and ATMs in wealthier areas of the country. The armored truck metaphor comes from the Bim advisors themselves, as in this case, they collect and centralize cash from Bimmers and take it to bank agents to cash it in back to digital and to the mobile money system. The Bim advisors are thus the 'human (not) armored (not) trucks' that create and feed the agents' network.[195] In this way, the Bim advisors organized practices that were essential for bringing money to the engineers' ready-to-use and actually considered digital pipelines.

The Bim advisors and the network of Bimmers and bank agents as the trustworthy cash in points for Bim are what I call 'peripheral technology,' an assemblage of humans with smartphones, basic cellphones, money in cash and digital form *mobilized* at the outskirts of Lima to create a network of practices needed for Bim to work. Seemingly, to *exist*, the digital did not need these other practices or pipelines, but to *work properly* the digital needed to reach beyond itself and connect with them as they both bring money to the engineers formally recognized digital infrastructure and build trust on this new 'digital ecosystem' among users. I call these other pipelines 'peripheral' because of the locations in which they operate –at the peripheries of the capital city, where the unbanked populations concentrate- and because they are not represented as part of PDP's engineers and managers' diagrams portraying the 'architecture of the system'.

[195] I return to this figure of Bim advisors as the armored trucks and the types of money they transport and transform in the next chapter.

These other pipelines are thus, *doubly peripheral*: they exist geographically and *conceptually* in the peripheries of Bim. Geographically, these pipes, and the practices that make them, happen at the margins of Lima city's wealthiest areas and of the engineers' spaces –that is, in the spaces of the 'others': the poor, the unbanked, the everyday fighters, which are also the areas where the Bim advisors' themselves (and Tambo) come from. They are *conceptually* peripheral because neither Tambo nor the Bim advisors appear in any of the engineers and managers' diagrams; these do not include them as part of Bim's technology. They exist at the peripheries of both the engineers' physical pipelines and of their formal diagramming imagination of the digital—and yet not outside of their field practices to make it work.

Even though these mediators are incorporated in the daily practices of these seasoned engineers with *calle* (firsthand field experience), they remain invisible in the formal discourse and publicly available representation of the technology. This corresponds as well to how usually technology is represented. While models, with their neat diagrams and industry reports, often portray frictionless technologies as solutions to infrastructural problems, the reality of their deployment reveals a different story (Pickering 1995 among others). The concept of delivering frictionless money contrasts sharply with the actual friction inherent in the process required to make it work with all the humans and their sociotechnical assemblages included (Latour 1992; 2005), as these engineers know well. In practice, the categories the engineers use to formally explain their technology are constantly challenged.

In the field scenes I shared we can see those that bankers consider unbanked—and that the engineers also call unbanked even though they are more intimate with the ecology of practices in which their daily economies unfold—are far from being completely isolated or lacking routine relatings with banks or with digital forms of value. Take, for instance, the example of airtime, that is the digital form of value that the agentes de recarga use to top-up their clients' phones since early

2000s. Airtime minutes are digital tokens with monetary value that translates into time online or using information services. Airtime is "a currency of sorts" (Maurer 2015) as credit for information services: SMS, calls, internet. As such its value circulates in the mobile network operators or telecoms networks and not in the banking system. The shops' clientele thus is familiar with purchasing, storing and transacting in digital tokens, but this sort of digital currency is not exchangeable with mobile money as banking that Modelo Perú is deploying via Bim, money that is digitally stored under the control of banks even if they still use the pipelines of telecoms to circulate.

Additionally, any of the 'unbanked' clients of the shops visited may not have bank accounts or loans and debt with banks, and in that sense, they challenge a usual definition of a client from the perspective of banks. However, they use the banks' services quite frequently via Agents, to pay their bills, send money to family, and top-up their phones. It seems that the problem for banks is that they don't have their information, they do not control their data and money. More specifically, they know them *as a population*, as a social group, and not individually. To know them individually, they need to have ways of identifying them (accounts). Bim is a way to start tracking them and getting to know them closely.

The field and the diagram: different registers of knowledge

It seemed to me that engineers operated in different registers, separating the more abstract, logical work from the flexibility and pragmatic knowledge they deployed in the field. As I have shown in these pages, people whom the engineers would classify in some conversations, settings and through some diagramming practices under social development categories of intervention (such as the unbanked), were hard to find 'in pure form' in the field, for lack of better language. The engineers were aware of this once the project was deployed, if not before. People in San Juan de

Lurigancho interacted with banks and digital money, complicating any simple distinction between banked and unbanked or digital and non-digital, despite their relatings not being as regular as those of established clients. Moreover, the engineers were not intervening with Bim in an empty place, it was a space already highly intervened by banks and telecoms and their agents, phones and POS.[196]

In my field stories we can see that the day-to-day subsistence cash economies that Modelo Peru and Bim seek to transform for the 'financial inclusion' of 'the poor' challenge any simple division between banked and unbanked, digital and non-digital. Shopkeepers on the outskirts of more incorporated economies into global financial systems do way more than just selling their products. They have been performing for years (since the mid-2000s), many digital and monetary tasks and services on behalf of corporations whether as Agentes de recargas for telecommunication operators or as Agentes corresponsales for banks. Merchants perform these services both for banks and telecoms without formal contracts or salaries and in different yet similarly organized low monetary commissions' schemes which they don't consider beneficial in terms of profit. And yet, these services, complementary to the core of their business, have become part of the essential amenities they provide, they are hooked to them to secure clientele to their shops. Iván, the engineer organizing the Bim advisors not only knows about this situation but also was one of the creators and implementers of the widest network of bank agents, that of the largest bank, BCP.

Iván, now in his role as a marketing strategist for Bim, devised the Bim advisors' experiment of sending Bim advisors like Eduardo to convert shopkeepers into Bimmers, building precisely on his

[196] Another digital financial network beyond the scope of my work started to colonize small shops in the capital city by the second half of 2010s: a network of correspondent agents of all banks, accessible with a POS like those of larger shops, which accepts credit cards, debit cards and can also do top-ups to all operators. The one I hear most often in my visits to shops in 2019 was Kasnet ("Somos la primera y más grande red de Agentes Corresponsales Multibanco del Perú"). This was yet another set of practices, third parties, promoters and advisors, another arrangement of pipelines of banks and telecoms and credit card systems, another option that shopkeepers were forced to incorporate with its fees mostly obscure to them. Capillarity of the digital and its many layers and redundancy of accesses to the digital (but with money already in digital form).

extensive field knowledge of these commonly called ‘cash economies’ though they aren’t ‘purely’ non digital as in their diagrams. This time, Iván actions aimed to overcome the shortfalls of banks, especially BCP, in promoting their shared mobile money infrastructure, securing reliable cash in points for mobile money and experimenting with ways to generate transactionality. This strategy also capitalizes on existing infrastructures and networks of adjacent and overlapping practices (of telecoms and banks).

Sociologist of science Harry Collins (2010) discusses the difference between tacit and explicit knowledge—knowledge that is not only known but also communicable—and situates tacit knowledge in the moment when expertise moves to action. He describes the actual work of science as a constant negotiation between the performance of the abstract ideas and scientific models (that is, the formalized scientific knowledge that goes into journals) and science in practice which is handled in very human, messy, and interpersonal ways, with knowledge mostly transmitted tacitly or informally. For example, there are reasons why people prefer to work in certain laboratories over others. There are skills and insights that can only be acquired by being there, directly experiencing them, and which cannot be gained from reading formal knowledge in journal articles. Moreover, according to Collins, it is when explicit knowledge becomes the norm and there is a need to formally articulate what we know to validate it (only in relatively more recent times) that different degrees of tacit knowledge become puzzling. In practice, there is a continuum between these two, and tacit knowledge, as he argues, can only be understood in the context of explicit knowledge. Not only that, but he also emphasizes how the informal is remarkably efficient; the social operation of the formal relies on it.

Collin’s ideas are useful for contemplating the practices I am describing here, and how they become formalized, to what extent, and what that formalization actually implies. Some Bim practices proved effective in the field, subsequently becoming socialized and turning into explicit strategies.

For example, engineers and Bim advisors described their role to me in 2017 as advertising Bim and enrolling Bimmers in exchange for comisiones, despite already functioning as mobile HTMs supplying prefund money. The latter aspect could be considered tacit knowledge, which I had to inquire about after systematically observing it during fieldwork with the Bim advisors. By 2019, however, the prefund money function was clearly communicated and organized by Tambo every morning before Bim advisors started their rounds visiting shopkeepers. Although still somewhat informal (not documented in written records), Bim advisors even jokingly referred to this function as 'armored trucks.'

There are even fewer practices, such as the Bimmers serving as points of cash in for mobile money, which have been documented in formal written forms of knowledge (diagrams included). The formal inclusion of this aspect of the mobile money network, however, mirrors what has already been recognized and discussed as critical human/infrastructural points in both professional and scholarly literature on mobile money (Kendall et. al 2011; Jack and Suri 2014; Maurer 2010). My contribution, in this sense, has been to bring to the foreground or explicitly articulate the role that Bim advisors and their informal (or as-yet-unwritten) practices play in this endeavor.

Moreover, it seems to me that engineers are trained to leave this pragmatic and highly mediated aspect of technology outside of its more formal representations. Their work of translating the practice into a more formal knowledge necessarily seems to imply the erasure of friction in favor of legibility within the habits of thought and representation expected in their discipline and the wider network of practices in which it unfolds (Harvey and Knox 2015; D'Avella 2019).

The practices I am describing in these pages go unacknowledged in formal diagrams and imaginations of how this technology works and is 'sold' to its donors. There is a stark disparity between the disembodied pure abstraction of digital money and its pipelines as portrayed in the engineers' diagrams and the hidden, labor-intensive processes, critical for its delivery and

functionality. In practice, Bim totally depends on what is left outside of the 'architecture' of its system, it relies on the tacit knowledge (Collins 2010) and the creativity that its engineers, Bim advisors and Bimmers deploy every day, expressed for instance, in the different work of mediation that these figures do.[197] For instance, in my research, it sheds light on the lively networks of distribuidoras, the third parties of telecoms, banks, and also the Bim advisors from PDP. They, in the form of humans on foot with cash and simple digital devices such as cellphones go around supplying merchants—*the last mile of the last mile.* Moreover, they are more than intermediaries, but mediators defending their territory not only by offering incentives but also by threatening merchants to remove them if they work with other brands and their services.

Thus, it is safe to say that is not that engineers fail to recognize the distinction between these formal and field registers; rather, their approach is strategic. They make deliberate choices to mediate the technology they are invested in seeing function. They choose what to articulate, what to include in diagrams, and to what extent they render their tacit knowledge explicit, and for what purposes. For instance, they discuss Bim advisors' strategy in the form of spreadsheets and numerical data in the *Comites Operativos* meetings with representatives of each bank. These discussions aim to demonstrate how this experimental strategy to 'lubricate Bim's pipes' is going well and generating transactionality towards Bim reaching its break-even point and start to make profits for banks. They share this information hoping to encourage further *aportes de capital* (capital contributions) from the banks.

Engineers do not depict Bim advisors in diagrams because they know that these figures from the field do not belong to the formal imagination of the digital (even when digital is 'for development' as financial inclusion). The diagrams typically start with shopkeepers and agents,

[197] As we will see in detail in the next chapter, the creativity is also expressed on the types of monies they put in circulation to lubricate Bim's pipes.

similar to the representation of M-Pesa. Although in practice, M-Pesa likely involves human roles akin to the Bim advisors or the telecom distribuidoras supplying their agents, including such figures in diagrams might not generate the desired support and enthusiasm for a technology that relies heavily on last-mile infrastructure (as in many 'human legs' to function).[198]

Last mile infrastructures: at the peripheries of the engineers' formal inscription practices but the center of all their field practices

The notion of peripheral technology marks this inflection point in which (or when or where) the rules of technology change. PDP engineers imagined some rules and chains of processes, of production, distribution, and circulation for the digital (as state currency enters and circulates its pipelines in the form of equivalent digital tokens) but the rules that govern that technology shift or need to shift for the technology to function and deliver in the peripheries. For instance, engineers assumed that the points of cash/in and cash/out where cash gets transformed into digital to enter the mobile money pipelines would be already out-there and technologically and humanly ready—as humans with cellphones with the Bim Wallet—. At times, and alternatively, they referred to this entry point for the digital as the 'last mile' (*la última milla*) of the infrastructure they were constructing and deploying. Importantly, and said whether in English or Spanish, the 'last mile' was not their problem; it was perceived as the responsibility of banks to manage as part of the initial collaborative design of Modelo Peru.

[198] D'Avella (2019) builds on Elyachar 2012 following Polanyi and tacit knowledge: "informal ways of knowing and doing the work of measurement in the market (…) in the face of more formalized and standardized methodologies" (76). Experts as "people that bridges formalized knowledge and other forms", "formalized knowledge as tools to think with rather than something to apply rigorously" (79) and on expertise and local and global (88).

The term ‘last mile’ is widely used by professionals and technicians within the telecommunications, cable, and internet industries to refer to the final leg of the networks that deliver services to customers. For example, the old copper wire lines connecting landline phones to the local telephone exchange; the coaxial cable carrying cable television signals from utility poles to its subscribers’ homes; and cell towers linking local cell phones to the cellular network.[199] The usage of this term broadened in the past two decades to encompass various distribution networks, including water and natural gas pipes and package delivery services.

In addition, the ‘last mile’ is a matter of concern in deploying IT infrastructures irrespective of location; however, its deployment and maintenance also vary depending on the constituencies they serve and how worthy of investment the state or businesses deem them (See, for instance, Anand 2017). In other words, as I elaborate below, engineers integrated (not without tensions) their mobile money system to the distinct banks and telecoms’ last mile arrangements already in place—and already tailored to the demographics of those considered peripheral to central powers and profit motives.

I am familiar with the ‘last mile’ jargon because it permeated the language and practices of development as well, as often the last-mile communication delivery problem intersected with low-income, peri-urban, and rural environments and the ‘populations’ that live there. As a former development practitioner, back in 2005 and 2006, I was a project manager of last-mile pilot projects in rural towns in Perú on behalf of USAID’s ‘Last Mile Initiative’ (LMI). I worked for the local branch of a larger US-based company, which was in this case, acting as an intermediary of USAID’s program, deployed in several ‘developing’ countries in a time prior to, for instance, the widespread adoption of wireless internet standards like Wi-Fi.

[199] Wikipedia. https://en.wikipedia.org/wiki/Last_mile_(telecommunications)

Because of its techno solutionist approach to 'the poor,' this company, which was what I described as a business-tied-to-development, deserved a whole chapter in Prahalad's "The Fortune at the bottom of the Pyramid" (2004). In my experience, the project consisted of a preliminary study and pilot deployment of technologies to provide access to phone and internet services in impoverished rural towns lacking access or with extremely limited access to those services. I left the company before the pilot was implemented, if it ever was.[200] During the phase I participated in, we surveyed potential towns for the pilot in rural Peru, evaluated their feasibility, costs, and risks, and explored various internet and phone (Voice over Internet Protocol or VoIP) devices, providers, and infrastructure set ups.

In the small towns in the Andes region I visited as a project manager and with my then engineer colleagues (also project managers) of Last Mile initiatives, it was common at that time to have no landlines (as these were mostly urban, middle-class, and hard-to-get features), no cellphone towers (thus no signal) and only one public phone available in the main shop of each town for the entire community. One single public phone was the last mile of telecommunications infrastructure assigned for that demographic by telecom companies.

In comparison to other local *comercios* (shops), the specific location of the public phone, in addition to its role as a communication device, communicated the higher status of the establishment and the family owners as well. All transactions in shops relied on cash and bookkeeping of debts (for locals), as there was no connectivity available for cards systems. ATMs or bank branches were not in sight either; the last mile of the banking system ended miles away from these villages, in towns relatively larger and more connected to commerce and tourism where banks had clients and

[200] Both project managers of this project – an industrial engineer and myself, a communication specialist – were dissatisfied with how the project was managed at a higher level than the one we occupied, both nationally and internationally. It soon became evident to us that most of the funds were spent on intermediaries, from Washington to Lima. The remaining budget allocated to deploy the technology in rural towns and supposedly benefit 'the poor' was insufficient to implement something of value.

considered worthy to invest on brick-and-mortar infrastructure. Sometimes, one had to travel back to each region's capital cities to access banks and digital money to convert back to cash to use in these cash economies. *Para viajar por el Perú tienes que llevar efectivo*—to travel in Peru you must carry cash—was common advice at the time.

When I came back to Peru in 2015 as a researcher, during my first field visit to what was still a project (Modelo Perú) and not yet a fully operational infrastructure for mobile money (Bim), the environment had considerably changed. Cash was still king in the country, but basic cellphones were ubiquitous, and cellphone signal was available in most places.[201] As part of those changes, the connectivity landscape in small shops had undergone significant changes as well, including in rural towns but particularly around the capital city's most central areas (that is, in the peripheries of Lima) where I conducted fieldwork for this chapter.

These landscapes continued to evolve throughout the years of my research to the point that by the early 2020s, in the post COVID-19 pandemic era, smartphones, payment Apps, and QRs became prevalent in shops. However, this chapter narrates a time before that—the decade and a half between the early 2000s to end of 2010s—during which agentes de recarga became the ubiquitous last mile of telecoms, and, agentes corresponsales emerged as the last mile for banks in these, according to their jargon, 'underserved' areas (as seen in Figure 7). Replacing public phones, agentes corresponsales also emerged as status symbols among *bodegas*, communicating that the shop was well established and connected to more central areas. All the while public phones, as inert objects, mostly abandoned or 'dead' infrastructures (*no dan tono o línea*, no dial tone), are still visible in stores around the country, serving as decoration, curiosities, or reminders of the past in the present (Figure 4.7).

[201] There is however, an important distinction between rural towns connected to commerce, mining-extractive projects or tourism vs those with mostly locals in which mobile payments are not yet prominent.



Figure 4.7. Two shops in which merchants function as Bimmers and as agentes de recargas virtuales on behalf of telecoms, in a neighborhood in Lima Norte. On the left: the store features innumerable ads for top-up services for different mobile network operators, and a public phone lingers on the metal door frame. On the right, a banner advertising leche Gloria ("drink three glasses of milk daily") with a famous local soccer player on it (Advincula) is repurposed by the merchant to advertise cellphone top-ups to attract clientele. Collique, Lima, August 2019. Photos by the author.

Independently of the actual length of the final leg of an infrastructure (which varies on each case), metaphorically, practitioners refer to it as a 'mile.' The metaphor, in all the cases –including the ones I participated in, points to the last portion of a physical infrastructure reaching the end-user's premises (as in the examples above: coaxial cables, phone lines, cell towers, wireless internet devices to support VoIP). While these last-mile infrastructures require humans to install and maintain them, what often gets foregrounded with the metaphor is the devices and technologies, the non-human aspect. This emphasis may obey the nature of these types of networks, which do not require a human to be permanently present to function; they can be remotely monitored unless they break down. In Bim's case, however, the 'last mile' that engineers refer to is at all times a mix of humans and technology: individuals equipped with cellphones supplied with digital tokens to serve as cash in/out

points for Bim. It is, in short, 'last mile' jargon and practices connected to 'inclusion' imagination and its practices.

PDP engineers assumed (as it was part of the collaborative promise of Modelo Peru) that banks would identify *bodegueros* (shopkeepers), train them as Bimmers or Bim agents, and organize the supply of digital tokens. This aspect of the design was in turn assumed to be viable and easily made to work smoothly for Bim, because, by the time this project was implemented, as mentioned earlier, the connectivity landscape of small shops had changed dramatically compared to the early 2000s. Specifically, the two largest banks in the partnership (BCP and Interbank) already had networks of *agentes corresponsales* in place—humans with POS devices working on behalf of them—whom they could readily enlist as Bim agents, or so the promising idea went. Alternatively, banks could train vendors who were already acting *as agentes de recarga* for telecoms—humans with basic cellphones—to also become Bim agents.

In other words, Modelo Perú assumed that some people (shopkeepers everywhere) were already familiar or acquainted with certain digital money practices and that Bim could be seamlessly integrated (*montado*) on top of that. Moreover, as mentioned earlier, engineers were initially unconcerned about this aspect, assuming that banks would handle it. However, in practice, that was not the case. BCP and Interbank were not willing to undertake the ongoing task of training and supporting their correspondent agents to act as agents for Bim, let alone extend this support to merchants working for telecoms as *agentes de recarga*.

So, engineers were confronted with a double problem: first, the 'last mile' –a matter of concern in deploying IT infrastructures irrespective of location but often connected to ways in which developers of technology racially and socioeconomically classify people—was not set up by banks either previously or simultaneously to their deployment of pipes. Secondly, they centrally imagined

this ‘last mile’ in a way that didn’t align with the realities of the peripheries where it was supposed to work.

This is the first problem in detail: for merchants to serve as the last-mile for Bim, acting as trustworthy cash in/out points for the end-users they were catering to (easily accessible, conveniently located, and fully supplied), they, precisely, needed to be systematically supplied with digital tokens. In other words, merchants needed to top up their own digital wallets first in order to be the conversion points for their clients— in receiving their cash and in turn by transferring digital tokens from their Bim wallets. We have to remember that these merchants, just like their clientele, were also ‘unbanked’ (though becoming somewhat banked through their enrollment as Bimmers). This means that they didn’t have prior digital money in bank accounts to transfer as digital tokens to their Bim mobile wallets.

They were, therefore, a sort of ‘last mile’ of the digital that needed to be connected to the central system (mobile wallet), enabling them to become, in turn, the ‘last mile’ infrastructure for their also unbanked clients. It seems that PDP managers and engineers assumed that shopkeepers enrolled as Bimmers in exchange of monetary incentives per transaction done on Bim or *comisiones,* would accept as part of their role to set aside time every other day to go and carry out this step themselves by approaching the nearest bank or shop (bigger than theirs but still local) where a merchant with a point-of-sale (POS) device acted as correspondent agent for a bank to exchange cash for digital tokens.

In practice, and this leads us to the second problem, that assumption of the design was unsustainable in the subsistence economies of the people in whom they grounded their categories (‘the working poor,’ ‘the everyday full-time fighters,’ the ‘unbanked’). In the economic landscape where they were attempting to deploy this technology—comprising street vendors, pedal vending cars (triciclos), and local shops, situated one next to the other—merchants couldn’t find the right time

and also couldn't afford to close their doors or to leave their stalls unattended unless faced with an emergency. Clients, as they mentioned during fieldwork, will not come back next time if they see the shop closed, they will go directly somewhere else. Shopkeepers were unwilling to take such risks for the marginal gains (*comisiones*) that operating as Bimmers might yield.

We have to keep in mind that these are local corner shops, often no larger than a small room in a house facing the street, typically managed by a single family member who has no other source of income, and who is primarily dedicated to tending to the household and family needs. Taking the step to close their shops would not only mean a potential loss of business opportunities but, in many cases, also leaving small children or elderly relatives unattended. Additionally, there are no armored trucks going to the peripheries to each small bodega, supplying them with money; armored trucks go to the banks and ATMs and supermarkets in wealthier areas and to bigger business than theirs in the urban peripheries. The peripheral operates, thus, under a different system of rules than the central. It is a matter not only of location but of scale (See Figure 4.8). This gap in the 'pipelines,' which exceeded the engineers' original imagination (or focus), is precisely what the Bim advisors bridge.

Bim advisors mediated by another third party (Tambo) and not directly by PDP (the third party of the banks), thus, deal with the much needed 'last mile' infrastructure for Bim to work by creating, supplying, and maintaining the cash in and cash out points, that is, the shopkeepers with a cellphone who convert the cash of their clients into mobile money. Much like in river engineering projects where complex hydraulic systems end at some point and there is a need for people to literally carry the water from where the pipes end and to the towns (or the low-income neighborhoods without plumbing installation) where it is needed, here too the 'last mile' is human, but not only. Comparing them with 'pipelines' is, therefore, both literal and a metaphor.



Figure 4.8. Street vendors, corner shops and 'informal' markets in the hilly areas of Lima Norte and Este that the Bim advisors walk daily. February 2017 and July 2019. Photos by the author.

Take, for instance, the figure of the *bhishtees* of Mumbai who, while fading away today, historically played a vital role in the city as mediators of the water delivery infrastructure, carrying water with goatskin handmade bags and bringing it to every shop, home and office.[202] Or, the role of immigrant Ashkenazi women in Jewish ghetto communities in the 19th century New York City where early aqueducts were developed but the 'last mile' as "the residential infrastructure that brought water (or lack of thereof) into people's homes" was not, especially in those impoverished areas of the city (Malin 2022, 40). Women needed to fetch water to cook, clean, bathe and do laundry, from hand-powered pumps, "outdoor wells and privies" and carry them in buckets, tubes,

[202] Photo essay "The Water Carriers of Mumbai" in the Mumbai Water Narratives project, by Mohmad Aslam Saiyad, story written by Minaz Ansari in: https://confluence.livingwatersmuseum.org/water-livelihoods/exhibit03.php (last accessed 02/13/2024).

and pots many floors up in the tenement buildings where they lived (Ibid.). Returning to my own fieldwork, the areas I explored with the Bim advisors often lack plumbing connections and, even if they do, water scarcity is a regular issue there. Water trucks (*camiones de agua potable*) mediate that need; with unregulated and fluctuating prices according to demand, they sell this precious commodity per bucket, gallon, or, if available, by house tank.[203] Then women, men and sometimes children carry these containers back to their homes.

The 'last mile' notion and metaphor, thus, renders visible not only the transportation and distribution problems of the last leg of supply chains—whether of water, information, or money—but in my research, it sheds light on the lively networks of *distribuidoras*, the third parties of telecoms, banks, and also the Bim advisors from Tambo and PDP. They, in the form of humans on foot with cash and simple digital devices such as cellphones go around supplying merchants—they perform last mile work so the last mile of the supply chain can deliver to its end-users. Moreover, they are more than intermediaries, they defend their territory not only by offering incentives but also by threatening merchants to remove them if they work with other brands and their services.

As I followed these figures (Bim Advisors and Bimmers), my chapter unveiled an ecology of practices (Stengers 2005) involving banks and mobile network operators at these peripheries. The third parties of the telecoms (*las distribuidoras*) walk around supplying digital funds in exchange of cash, much like the Bim advisors, to merchants who perform services on their behalf (as *Agentes de recarga* or top up agents for telecoms). There are also the intermediaries of banks who visit their *agentes corresponsales* or correspondent agents. Agentes de recarga and bank agents operate on behalf of banks and telecoms for meager monetary incentives, similar to the Bimmers. In other words, I have traced how the Bim advisors insert themselves in these already densely (inter)mediated

[203] For a comprehensive study on 'last mile' water carriage see Geere, J.-A. and Cortobius, M. 2017.

environments, learning and borrowing from these other mediators and often in conflict with them. In this way, my chapter contributes to the classic Science and Technology Studies question of how technology operates in practice by contrasting the envisioned functionality of the system (portrayed in engineering and banking diagrams) with its actual operation through often overlooked human mediators (invisible in the formal discourse and representation of the technology).

My chapter has shown how Bim emerges as more than one and less than many (Strathern 2005) through the multiplicity of practices and associations that attempt to make it cohere (Law 2002, 3; also, Mol 2002). Paraphrasing anthropologist of finance Nicholas D'Avella (2019), Bim exists always in relation, it is what it is because of the relations that constitute it. Bim is the infrastructural vessel of a payment agreement among banks; Bim is a set of pipelines, servers, operational manual, protocols and APIs; a series of daily and monthly reports on transactions and numbers of users in Excel spreadsheets; Bim is, in the field, a network of humans with cellphones and cash, along with top-up and cash-in practices and as relations of trust forged between shopkeepers as Bimmers and the Bim advisors who routinely visit them.

Furthermore, the whole endeavor of unblocking the pipelines for the smooth operation of the digital reveals the inherently political character of the technical and its infrastructural forms (see Harvey and Knox 2015). On one hand, the entire purpose of building and implementing Bim seems to be to reverse-engineer M-Pesa and keep money under the control of banks —even though M-Pesa, in this case, takes the form of a speculative model, an example of what has happened elsewhere that travels to Peru as a cautionary tale of a threatening possible future, and not a real infrastructural intervention in the country—. The goal of preemptively desintermediating the Peruvian telecoms by using their own pipelines —just in case they were planning to do something like M-Pesa in Kenya— can hardly be considered purely technical.

On the other hand, it turned out that this endeavor necessitated more than digital engineering, regulation, and coordination among banks and the materialities involved in these practices. It needed engineers' fieldwork experiments to figure it out in practice and in the real terrain in which this mobile money was supposed to work, how humans with cash and cellphones could work as last-mile technologies for Bim. Thus, the task of disintermediating telecoms not only occurred in what engineers considered properly digital but also in the extra-digital realm, or the last-mile aspect of it, as they carved space for Bim out of the business of telecoms' distribuidoras.

Finally, banks, externally or initially, when telecoms were a potential threat, risking disintermediating them from the business of money, appeared to be fully supportive and excited about the project, according to PDP engineers, who were drawn to this project in part driven by that shared enthusiasm. However, once Bim existed in infrastructural form, the situation seemed to gradually change. While banks still projected an image of support in some instances, such as with the state regulators, internally they delayed technical fixes, moved very slowly, and diluted their responsibility in the partnership structure. In short, they politically maneuvered every technical decision as their interest geared towards developing their own mobile wallets, as discussed in Chapter 3.

In the following chapter, I focus on the materialities involved in making Bim work as opposed to only exist, particularly the different types of money and physical receipts that Bim advisors and Bimmers mobilize to generate transactions and trust in the system.

CHAPTER 5

Peripheral Technologies, Efficient Informality and the Formal Enough

Introduction

In this chapter, I examine three types of money, both in cash form and in digital, that the Bim advisers, whom I call the mobile HTMs (Human Teller Machines), mobilize to convince shopkeepers to become Bimmers—a type of expert users who assist final users with transactions[204]—and to keep them permanently supplied with digital funds. These are *prefondeo* or prefund money, commission or incentive money, and per diem money. These various moneys are central to making the mobile money payment system function, rather than merely exist. They are mobilized to promote the use of different services such as phone top-ups, money transfers, service payments and microloan repayments, which PDP is attempting to generate through Bim. As the engineers in charge of overseeing this mobile money system put it, these different types of money help "lubricate Bim's pipes" by simultaneously generating "transactionality" and building trust in the system. In sum, these moneys are mobilized to create, in the words of its experts, the "ecosystem" for digital money tailored to its targeted audiences. This ecosystem is operationally envisioned as a "unique highway" for all banking partners.

While these monies are all 'the same' in one way (as Soles—Suns—the Peruvian legal tender) and in the overall goal they contribute to –to attract unbanked money into Bim—they are very distinct in the specific purposes they fulfill, the relations they make, and the networks they

[204] Engineers describe Bimmers as a special case in the system ("una casuistica especial en el sistema"), akin to Microsoft's MVPs (Most Valuable Professionals). Unlike regular users or agents who handle cash-in/out transactions, engineers imagine Bimmers as higher-level, VIP users who promote Bim's use among their clients, and they view them as a temporary seeding strategy to boost transactions in Bim. More on this on Chapter 4.

circulate through. These monies are also targeted to a specific public; they are not intended, for instance, to transform the cash economies of 'the rich,' such as the suitcases full of cash examined in the previous chapter. Rather, Bim advisers set them in motion to bring 'the poor's money' to the banks' system. The 'financial inclusion' of these constituencies, the idea goes, will contribute to the formalization of these 'informal' cash economies.

In the chapter, I also examine the role played by other materialities involved in Bim's operation, such as the written contracts to expand the Bim wallet transactional limits for Bimmers—contracts that shopkeepers were reluctant to sign—and physical receipts and advertising, including in-store and outdoor signage (e.g., banners, posters and ceiling danglers). These materials, frequently requested by shopkeepers, proved central for building trust in the system and ensuring the flow of money into it.

As I follow the special monies (Zelizer 2017) and other materialities that the mobile HTMs and Bimmers handle to fulfill their tasks, I also describe the labor regimes needed to make Bim function, which transition from 'formal' to 'informal' (as in lacking written contracts and benefits) almost perfectly paralleling the movement of the technology from so-called centers to peripheries, like a "journey across class in space" (Anand 2017: 62). I show how the geographic distribution of 'centers' (in which engineers and bankers prototype financial-digital pipes and turn them into existence) and 'peripheries' (in which 'populations' are targeted as the beneficiaries of these endeavors) match up layers of class and racial classifications and of labor regimes and economies that go from the 'formal' to the 'informal,' or what Aníbal Quijano (2000) termed 'the coloniality of power.' These classifications not only affect the supposedly 'beneficiaries' of this digital financialization project—the unbanked 'working poor', the 'every day full-time fighter' populations) as examined in previous chapters—but, remarkably, also rank the people working within the project itself. This includes everyone from bankers to engineers to Bim advisers to shopkeepers as Bimmers,

assigning them to specific labor regimes, with differentiated rights and an unequal distribution of risks associated with handling increasingly large sums of money.

I show how experts attribute "informality" to certain practices—those they seek to transform—and how they associate this informality with specific "populations" (second-class citizens), following the lines of national biopolitical structures and their concomitant racial thinking and feeling (De la Cadena 2000). Moreover, I show how perceived and managed (degrees of) informality seem to be also necessary for the formalization of cash economies—understood as the process of banking previously unbanked money. For instance, the practice of providing physical receipts for mobile transactions, which Bimmers engage in at the persistent request of some of their customers, is an informal practice–not validated by the bank partners and not included in the formalized knowledge produced by engineers about the mobile money system. However, this practice is overlooked by engineers as it helps achieve their goal of generating transactionality and trust in the system. For shopkeepers, providing receipts satisfies their clientele and allows them to earn monetary incentives, an additional—albeit marginal—source of income for their mostly subsistence economies. I propose replacing the term "informality" by "recurseo" to better witness the unfolding of many collaborations aimed at making ends meet, both with cash and digital money, at the margins of more fully banked economies.

Recurseo, comes from the noun *recurso* (resource) and is a colloquial term used in popular culture to refer to the act of being resourceful and the daily "resource-ing" that people engage in to survive and thrive. In my use and understanding, it is often associated with people or situations where solutions arise not from social or economic capital, generational wealth, or networks but from individual ingenuity, or contextual cleverness and creativity. The Association of Academies of the Spanish Language, in its dictionary of Americanisms, defines *recurseo* as an activity undertaken to earn extra income, in addition to a person's main job or craft –a meaning that, according to the

institution, extends both in Ecuador and Peru. The term also has other forms and uses, mostly limited to Peru's argot, such as *recursero/a* (referring to a person who seeks any means to survive or obtain additional income) and as a verb, *recursearse*. Recursearse is a reflexive verb in Spanish, meaning that the subject both perform and receives the action, rather than performing it on someone or something else. As a Peruvian-ism, it can also mean to obtain something in an irregular (or even illicit) manner, thus making it a term that exists in the margins of formality and legality, making it a perfect companion term for the explorations of this chapter.

Recurseo is connected to another colloquial term: *ser vivo.* To be *vivo*, which literally means 'alive', is to be 'clever.' A prevalent image among certain sectors in Peru is that *sobrevive el más vivo* (the cleverest survives). This cleverness or *viveza* is a sort of liveliness, a cunningness and ability to live in the moment that makes you survive. La *viveza* is not intelligence by formal standards; it does not mean being smart in the sense of following rules and doing the right thing, but rather being creative in bypassing obstacles –including the rules.[205]

Thus, in this chapter I delve deeper into the universe of *bodegas* (small shops) and neighborhood pharmacies and office supplies shops, encountering different types of money, phones, physical documents, along with advisers and shopkeepers. While my examination will show how experts address issues, find solutions, and manage daily practices in ways that distribute populations, roles, hierarchies, and the expected positions that different groups should occupy along the lines of

[205] Medical Anthropologist Elizabeth Roberts (2012), in her ethnography of assisted reproduction in the neighboring country of Ecuador, describes 'viveza criolla', at its most basic, as "putting one over on someone else, flouting the rules." It is a historically rich term with a complex meaning and, depending on the context, "it can be said admiringly or resentfully" about the actions of someone else's or even your own. She goes on, connecting viveza criolla with race: "Criollo means Creole: it suggests links to ancestry in Spain and thus whiteness. Viveza signifies the ability to get the upper hand, to pass above the law. Viveza criolla makes it possible to skip the line at the bank or the utility company or to get a driver's license without the usual difficulties." In Peru, it seems that 'viveza' (criolla or not) is linked to urban-ness rather than to whiteness (only): the urban cholo is vivo too. The colonial mestizo (mixed race/half-blood) was a vivo who altered the order and was out of place coming into the urban centers, opposed to the castizos (pure-blood Spanish) and Criollos (their descendants) who were supposedly decent people (Marisol De la Cadena 2005).

the coloniality of current life structures in the country, my focus is on exploring the creativity—*el recurseo*—that emerges within these contexts.[206]

In other words, I follow the mechanisms, strategies, and tensions in the daily practices of different mobile money mediators (not only engineers, but also Bim advisers, and Bimmers) and how they all circumvent, bypass, and operate within these social structures to ensure the project's success and make ends meet. Interestingly, we will also encounter what I term *corporate recurseo*—sets of practices that exist in the gray areas of legality as sorts of efficient (informal) shortcuts, through which banks and other entities manage their relatings with the constituencies they serve or seek to serve (and extract) at the peripheries.

Many cities in one: the 'emergent' Limas and their economic 'informality'

Early on a crisp winter morning back in July 2019, I met Dylan outside the old, dilapidated building where he had relocated his office not long ago, in one of the four corners of the Plaza Mayor (Main Square), the center of the historical/colonial center of Lima's city. Dylan is the manager and owner of Inversiones Tambo (Tambo Investments), a small business which, including him, has less than five permanent workers. Tambo is the third party hired by Pagos Digitales Peruanos (PDP), the company that the partnership of banks nicknamed Modelo Peru created to administer their collaboration (or payment agreement).[207] Tambo is in charge of promoting the use of the mobile

[206] Finn Brunton noted that the French verb débrouiller on its reflexive form se débrouiller, has a similar meaning. Débrouiller means literally to clarify or untangle, but in its reflexive mode, it more generally refers to "how to improvise, make do, and adapt whatever turns up to your purposes. The débrouillard is the resourceful person, savvy, we might say, who can "make it work" out of what is available."

[207] In the field, engineers and managers at PDP explained to me that the Modelo Peru partnership was essentially a payment agreement (un acuerdo de pagos) between banks, executed through a specific material infrastructure: a mobile wallet (Bim). The banks created the company PDP to deploy and maintain this infrastructure. In addition to

wallet Bim in the field. Dylan leads the team of *asesores Bim* (Bim advisers), who six days a week, from 9 am to 5 pm, journey on foot the hilly outskirts of Lima's more traditional and wealthier districts spreading the word of Bim's platform among shopkeepers of small *bodegas* (corner shops), *boticas* (drugstores) and *mercados* (farmers' markets).

When I started my long-term fieldwork at the end of 2016, Dylan' office was hosted in what seemed an auto-constructed, perhaps informally built, three-story building next to the Line 1 of Lima's metro station in the district of San Borja. San Borja belongs to Lima's central and more traditional districts, and it borders with San Isidro, the district where many of the wealthiest families in the country live, quite possibly including those of some of the Modelo Perú banks' CEOs. With its elite and privately-owned country club and golf course at the center, San Isidro is also the chosen location of many foreign ambassadors' houses. Additionally, San Isidro is known as Lima's financial district, where many of banks participating in the Modelo Peru partnership and their third party, PDP, have their headquarters and where, it could be said, the country's 'formal' economic powers concentrate.

In the field visit I am narrating in this chapter, in mid-2019, Dylan' office had moved to the very center of Peru's capital city with its colonial Plaza Mayor, and where, it could be said, the country's 'formal' political powers concentrate. Located just across the street from Tambo's office building, there was Palacio de Gobierno (Government's palace), where the President resides and officiates, and which was the former palace of the Spanish Viceroyalty of Peru. At the time of my visit, however, it was no longer Pedro Pablo Kuczynski, the elected President for that period (2016-2020), who officiated from the neighboring Palace, but its First Vice President, Martín Vizcarra.

managing the technological aspects, PDP was responsible for administering the proper reporting and settlement of payments among the entities involved in the payment agreement.

Kuczynski had resigned from his position a year earlier (in March 2018), an unprecedented move in contemporary Peruvian history. Vizcarra would not last long in office either, accused of corruption and impeached by a presumably equally corrupted Congress. As for Kuczynski's resignation, to simplify it a bit, it was partly due to political scandals and accusations that linked him with vote buying, among other more locally oriented reasons. Since April 2019, however, Kuczynski had been under house arrest, investigated as part of the transnational corruption case known as Operation 'Lava Jato' (car wash, in Portuguese). This legal case involved the Brazilian construction giant Odebrecht and government officials and businesspeople in many Latin American countries—including, albeit laterally, some Peruvian bankers and suitcases full of cash, as discussed in the previous chapter 3.[208]

As we climbed the once fancy and now poorly lit and insufficiently maintained building stairs and walked the equally dark and long hallway to his office, in a corner of Lima's Plaza Mayor, I asked Dylan why they moved to Lima Centro. He told me that his business was growing, and they needed more space. From the start of only seven Bim advisers, now the team has more than fifty people. He considered that it was convenient to move to this district because rent was cheaper than in his former office, and because the Bim advisers could go anywhere from there. Having his office near the Plaza Mayor, the place through which most transportation lines pass through, like veins pumping blood (and smog) in all directions, seemed for Dylan the best way to access the peripheral Limas that the Bim advisers needed to visit daily (which are also the areas where they live), at the outskirts of the more central Lima in what now is commonly called Lima Norte, Lima Este, and Lima Sur (North, East and South). That is, three additional 'Limas' to the traditional one (Lima Centro)—

[208] I discuss this transnational corruption legal case in Chapter 3 as it connects with the CEO of the largest bank in Peru, also partner in Modelo Peru and Bim, and some suitcases full of cash.

of the bankers, its offices, residences, and golf courses, and also of the PDP engineers and their mobile money pipes— (see Figure 5.1).

Lima Norte, Este and Sur in Figure 5.1 are the Limas of the 'others,' or the 'other' Limas, where migrants, mostly campesinos (peasants), settled in different migratory waves in the second half of the 20th century, many fleeing their communities in other regions of Peru due to violence and straining economic conditions that exceed the scope of my dissertation (see Degregori et. al. 1986; Golte & Adams 1987).[209] These are the Limas that traditional limeños and political and economic elites considered in derogatory ways *invasiones* (invasions of land), *barriadas* (slums), or euphemistically as *pueblos jóvenes* (young villages), or, in less charged terms, *asentamientos humanos* (human settlements). In these districts, houses made of brick and cement (*materiales nobles*) with water and electrical connections—albeit mostly informally built—have long replaced shelters made of *esteras* (straw and sticks), and paved roads have replaced dirty roads.

At the time of my fieldwork and after generations of people living in them, these are highly populated districts with vibrant cash (and digital) economies. The mainstream language used to refer to these areas has also changed over time, shifting from more socio-politically charged terms, such as the ones mentioned above (invasions, slums), to economic framings that highlight their potential and growth, as seen in terms like "emergent Lima" or "ascending Lima" (*Lima emergente*, *Lima pujante*). The colloquial term *recurseo* also emerges from the social life of these economies. These peripheral Limas, where the economies of 'the everyday full-time fighters' proliferate, subsist, and sometimes thrive, are also the areas where the Bim advisers themselves come from.

[209] While mostly migration concentrated in the peripheries of the capital city, internal migrants not only settled in Lima but in "the periphery of most Peruvian cities" in patterns of "rural-urban migration, from the late 1940s" (Crabtree and Durand 2017: 60).



Figure 5.1. Map of the city of Lima divided by zones: North, East, Center, South and the Provincia Constitutional del Callao, of colonial origin and with a special regime, and where Peru's chief seaport and main airport reside. Callao and Lima Centro, in pink and purple on the map, comprise the oldest and most traditional areas of the city. Lima's financial district is in Lima Centro, where the biggest banks partnering in Bim have skyscrapers and where PDP has its headquarters. My fieldwork with Bim advisers happened Lima Este (San Juan de Lurigancho) and in Lima Norte (Comas, Independencia y Carabayllo)—districts belonging to the green and yellow areas in the map. Source: mapadelima.com

Moreover, these 'other' Limas, in the sandy hills around the more traditional Limas, continue to expand and attract new generations of internal migrants coming from rural areas or smaller cities seeking better education and job opportunities in the capital city. They represent what the World Bank (and institutions alike) literature consider the spaces of 'emergent middle classes' (Ferreira et.al. 2013; Jaramillo & Zambrano 2013), a concept challenged by local contemporary Anthropology studies. These studies focus on how citizenship is currently constituted and negotiated in terms of access to services, consumerism, and cultural economies rather than economic redistribution or democratized access to economic capital and examine the real possibilities for social mobility at the margins of the state and the market (Uccelli & Garcia Llorens 2016; Huber & Lamas 2016).

These are the populations and emergent Limas whose 'formality' depends on digitizing their reserves of cash, supposedly both for their own benefit (as 'inclusion') and that of the country's 'economic growth.' Bim advisers seek to transform these cash (and digital but not banked) economies and not the elite ones, that is, the monetary practices of street vendors, subsistence small shops and their 'unbanked' clientele by bringing the cash which circulates in these Limas to the banks' mobile money system. To do so, the Bim advisers deploy a set of also very specific monetary practices, in cash and digital, as I will expand on soon, to convince and keep shopkeepers engaged as Bimmers, crucial last-mile points for their mobile money infrastructure. But before that, I will expand on some ideas opened in the previous chapter to characterize the shopkeepers' 'ecosystem,' or the universe of bodegas and their relationships with banks and telecoms (and digital money), that these experts and their field workers (Bim advisers) engage with.

Peripheries are like a different country: bank agents and telecom agents

In 2017, most Bim advisers operated in San Juan de Lurigancho, a densely populated district from east Lima. In 2019, advisers and Bim have spread to other districts, and my fieldwork was mostly in north Lima (Carabayllo, Comas and Independencia districts). The clients of the shops where Bim advisers are expected to seed Bimmers are people that Bim proponents imagined living near (a bit above or a bit below) economists' poverty lines and dwelling mostly on the hilly outskirts of the capital city and elsewhere in the country. They used to call them 'the working poor,' 'emprendedores' (entrepreneurs), and 'the everyday full-time fighters,' categories that also include the local merchants who both own and attend the shops that the Bim advisers regularly visit. In Bim's prototyping practices, experts considered this population as being 'financially excluded' which they define in terms of banking —as *unbanked*—or not yet having a relationship with banks. This a

population that they imagined living in 'informal' cash economies as opposed to the more 'formal' financial lives of those who are *banked.*[210]

But that was hardly the case in the field. People whom bankers and the engineers and managers working for them would classify under these categories of intervention have been interacting with banks and using their services for a long time, thanks to the shopkeepers in their neighborhoods (who also belong to these categories, according to these experts). People have been also engaging in digital monetary practices, not only with banks but with telecoms, again thanks to the shopkeepers in their neighborhoods. These shopkeepers have been providing services on behalf of banks and telecoms since mid-2000s, as *agentes corresponsales* or bank agents and as *agentes de recargas* or top-up agents, as described in the previous chapter. Thus, by the time that the banks launched their mobile money collaborative project (Bim) on the summer of 2016, shopkeepers in all the 'Limas' (peripheral and more central ones) had already established relationships with both banks and telecoms.

These relationships are not entirely formal (as with written contracts); rather they get sedimented and evolve through interactions with third parties who work for banks and telecom companies and visit these shops, much like the Bim advisers. In fact, the Bim advisers and their money practices could be seen as a borrowing from these figures, reflecting how all these entities imagine and serve their peripheral clients.

Instead of relying on traditional bank branches (brick-and-mortar offices), ATMs, or telecom offices, these entities primarily serve their peripheral clients through human agents, such as shopkeepers acting on their behalf. While there are some bank and telecom offices, the majority of their interactions in these Limas are conducted through these corner shops. As the marketing

[210] I discuss these terminologies and their reality making effects in the dissertation's Introduction.

manager for PDP explained to me, mobile money as a banking industry initiative in Peru, stems from the banks' previous collaborative experiment with *agentes* or *cajeros corresponsales* (correspondent agents or cashiers).

This collaborative experiment took place in the early 2000s, as part of a global trend in the professionalization of microfinance and the initial attempts by private banks to access a sector that was, at the time, mostly run by NGOs. Some of the engineers who were brought together to work for PDP come from that initiative, such as Abel, who oversees the Bim advisers and Bimmers' strategy. BCP, the main private bank in Peru started the agentes corresponsales strategy in the mid-2000s, as other banks in other places.[211] BCP had at the time of my field visit (2019) the biggest network of agents in the country, with more than eight thousand small merchants everywhere in Peru, who besides selling their shop's products, acted as its correspondent agents, followed by Interbank with more than three thousand, according to PDP engineers' calculations.

The concept of the bank agent stems from "microfinance institutions' efforts at 'branchless banking'" to deliver financial services for unbanked people: "instead of bringing people who are isolated geographically or who lack financial resources into the bank, bring the bank to them" (Maurer, Nelms & Rea 2013, 58). As experts of the Consultancy Group to Assist the Poor (CGAP) noted, "in a growing number of countries", instead of their own field officers, banks enabled themselves to offer services through "postal and retail outlets, including grocery stores, pharmacies, seed and fertilizer retailers, and gas stations, among others" (Lyman, Ivatury & Staschen 2006, 1). Agentes corresponsales are thus, a type of branchless banking which "seizes on existing retail and transit infrastructures" (Maurer, Nelms & Rea 2013, 58).

[211] BCP's network of correspondent agents began in 2005, with the installation of 63 BCP Agents in locations near the city of Lima. "By 2013, there were 5,820 BCP Agents nationwide, representing 22.2% of the national market for correspondent agents." This expansion proved the viability of this new service channel, and the leadership achieved by BCP. In: https://repositorio.up.edu.pe/handle/11354/2038

But also, the figure of the correspondent agents or cashiers draws from a concept common in the banking industry: the 'correspondent bank,' which provides services on behalf of another bank in a foreign nation. For example, there is no Bank of America in Peru, so this bank has an agreement with a local—yet transnational—bank (Scotiabank) to act as its correspondent bank in that territory. As a client of Bank of America, this meant that when I needed to withdraw money from my U.S. account while conducting fieldwork in Peru, without incurring additional fees, I had to use Scotiabank's ATMs. In technical terms, correspondent banks serve as intermediaries between an issuing bank and a receiving bank located abroad, facilitating transactions that either start or end in a different country.

In this case, with the figure of correspondent agents, Peruvian bankers treat the country's low income, high-risk urban areas (as well as difficult-to-access rural areas) as if they were foreign countries. These are areas within the country where bankers have chosen not to establish traditional bank branches or ATMs because it is expensive, risky, inefficient, and unprofitable for them. Instead, they use shopkeepers as their link to these internal "foreign lands," having them act as correspondent agents on their behalf and assume the risks that bankers prefer to avoid. Instead of venturing their brick-and-mortar infrastructure and employees into these areas, banks find it efficient and profitable to use merchants as intermediaries. With this strategy, banks outsource most of the risks involved in handling cash to the shopkeepers, thereby reducing their investment costs and routine infrastructure maintenance. Banks only provide shopkeepers with a point-of-sale device (POS) and support from third parties that assist with the operation.

It is not that banks hire the shopkeepers to work for them, formal labor relationships are bypassed by these business models. CGAP experts, in fact, comment that shopkeepers performing financial operations on behalf of banks or mobile network operators "are not always true 'agents' in the legal sense" because "they are not licensed to perform cash-in (deposit) and/or cash-out

(withdrawal) functions on their own behalf by banking regulation" (Lyman, Ivatury & Staschen 2006, 1). They can only do this "on behalf of a bank or e-money issuer" and thus, "essentially, these retail agents are acting as 'borrowed tellers'" (Ibid.). In other words, bankers conveniently navigate the legal boundaries of what they can do or not; they 'borrow' *humans* as tellers, meaning they informally enroll them to work for them, to 'formalize' cash economies. Considering *recurseo*—a characteristic often attributed to populations that banks seek to formalize and include via mobile money—we see here the recurseo of the banks themselves, and how they skillfully navigate formality and informality for their own purposes and benefit.

Without a formal contract, shopkeepers become the banks' intermediaries, effectively serving as 'borrowed tellers,' in exchange for minor monetary incentives or *comisiones* related to the volume of transactions they handle—a type of money that Bim advisers also mobilize, as I will explain in detail soon. Incentives for new services through POS often start relatively high as an introductory offer and then decrease and stabilize over time. The absence of contracts allows banks to unilaterally adjust the incentive amount that shopkeepers receive whenever they choose. By the time these incentives are reduced, shopkeepers are hooked to this function as their shop clientele also expects it. Bank third parties maintain the merchants' engagement with new functionalities and services they can provide via POS and new commissions schemes for them.

To become correspondent agents, one important onboarding step must be completed: merchants need to become the bank's client by opening a bank account with them, if they don't already have one (which is often the case). Thus, banks need these merchants to be *formal enough,* that is, without a contract but with bank accounts, so this 'last mile' infrastructure of correspondent agents can be deployed and merchants can use the POS for performing digital utility payments, phone top-ups, remittances and cash withdrawals for their shop's clients. Being formal enough thus means being banked, regardless of other labor issues that may complicate the 'formality' picture.

In the case of telecoms, small corner shops, rather than each company's offices or their third-party locations, serve their peripheral clients across the country providing top-up services. Most Peruvians prefer prepaid mobile lines (*líneas prepago*) over postpaid ones (*planes postpago*). This terminology (prepaid/postpaid lines) might have a different meaning in other Latin American countries, but in Peru, a prepaid line stays active through *recargas* (top-ups or recharges), while a postpaid line indicates that you have a contract with a telecom company and are subject to a monthly plan that grants access to certain services (e.g., specific number of call minutes, SMS messages, and internet usage). Even in early 2021, according to OSIPTEL, the state regulator and supervisor of private investments in telecommunications in the country, prepaid lines were still dominant by a large margin (62%).[212]

Shopkeepers and even street vendors provide top-up services to the clients of the different mobile network operators present in the country, and they used to do so using basic cellphones from each telecom provider as the low-tech entry point to their digital networks. This meant that merchants used to have a collection of basic cellphones, each from each telecom provider they worked for. This material arrangement is undergoing transformation with the expansion of smartphones and Apps from which to perform these top-up transactions and that was becoming visible in 2019, the fieldwork visit that informs this chapter.

Merchants, besides having a phone and line from each telecom to perform the top-up service on behalf of their clients, had specific incentive arrangements with each of the third parties of these telecom companies (*las distribuidoras* or distribution companies). Just like with the banks, these were not 'formal' or written arrangements. Rather, they were negotiated (extended and terminated) on a weekly basis. Las distribuidoras, in practice and in the field, took the form of people, often men,

[212] See: "Líneas móviles con planes postpago y pre pago, qué es lo que prefieren los usuarios," Gestion, January 11, 2021. In: https://gestion.pe/opinion/lineas-moviles-con-planes-postpago-y-pre-pago-que-es-lo-que-prefieren-los-usuarios-noticia/?ref=gesr

with cellphones, who either on foot or on pick-up trucks went around visiting shops and *pre-topping up* the phones of the merchants with airtime ("a currency of sorts," see Maurer 2015). They also administered the comisiones directly sent to the merchants' phones, and handled their questions, concerns, and technical problems on behalf of the telecoms they represented, a sort of mobile customer support. These arrangements are common practice and constitute 'insiders' knowledge.' They are informally communicated among professionals and third parties in the telecom industry, but not necessarily written and presented in formal, publicly accessible, diagrams, or the webpages of these companies.

Instead of formal contracts, trust and transactional relations are established through the recurrence in the doing, through the repetition of actions—in terms of periodic visits and money practices that become ingrained over time. Communication and financial corporations serve their peripheral constituencies differently than they do their central ones. These peripheral clients are imagined as more informal, and they are, in practice, served through more informal labor regimes. It is interesting to note how the figure of correspondent agent resembles that of a correspondent bank operating in a foreign land—in this case, the 'foreign land' consists of the internal peripheries (existing within the national territory and not outside of it) as spaces that contrast with the centers, composed by the minority population of those most extensively banked.

The informal users of digital and financial services

If shopkeepers are already providing services on behalf of telecoms and banks, which already have arrangements to serve these peripheral constituencies, from the perspective of banks, why is mobile money needed? What are they trying to do with it?

As described in the previous chapter, 'unbanked' clients of the shops I visited with the Bim advisers frequently use bank services through bank Agents located in the neighborhoods where they live to pay bills, send money to family, and top-up their phones.[213] However, they do so in ways that both challenge the usual definition of a formal client from the banks' perspective and complicate any simple distinction between banked and unbanked (and of digital and non-digital users).

I suggest that these relatings are not legible to banks within the conventional knowledge and management practices they use for established clients; these are *unbanked users of banks' services*. To play with a notion introduced in the previous chapter, these unbanked users of banks' services are treating banks as 'dumb pipes:' they do not have bank accounts, loans, or debt with banks, and they still use their services. Here, thus, we see the *recurseo* of the unbanked that is, the fact that they are, at their own convenience and *informally* using the banks' services —which represents an issue for the banks. These users of their services are not account or debt holders (or 'formal,' legible bank clients), the banks lack information on them, they do not control their data and money, and thus, they cannot directly offer them financial products, nor routinely benefit from them.

While the unbanked users of bank services do need to provide some form of identification (e.g., National ID or phone number) and may even pay a small fee (dependent on the service requested) to use the bank's services via correspondent agents to pay bills, send money to family, and top-up their phones, this communication is, however, unidirectional, fragmented, and scattered. Or in short, users decide when to start it and when to cut it. Banks cannot communicate back with these unbanked users of their services, and in that sense, they are like dumb pipes, being used as mere

[213] In addition to Agentes, I'm considering bank offices that have separate lines for regular clients, VIP clients, and non-clients.

intermediaries (in the Latourian sense), transporting without transforming (and without profiting from the data that could be systematically mined from these transactions).[214]

Banks know these 'informal' users of their services *as a population*, as a social group, but not individually—they are black boxes to the banks. To get to know them individually, they need to formalize them. In other words, banks need a way to identify and account for them individually, such as through accounts. Bim, in this sense, serves as a tool to start tracking these individuals and getting to know them more closely. We have to keep in mind though that, at the time of my visit, the largest banks in the country, and especially BCP (the one with the largest correspondent agents' network) are not only exploring Bim to get to know these constituencies, but also their own proprietary mobile money apps, deployed in parallel to Bim. Thus, banks are deploying different technologies and working with various intermediaries to expand their reach among the not so unbanked but not so formally known by them.

Human non armored trucks: Bim advisers and the moneys they mobilize

Once Dylan opened the door to his office, I could see an open workspace with a table at the center and desks facing the walls with a couple of people working on desk computers. A dark cherry, old, and stained carpet covered the entire office floor, infusing the space with the characteristic damp smell of Lima's most decrepit cement houses. Three of the four sides of this workspace had doors leading to more private areas: one to his office, another to that of the accountant—who is also William's wife—and the third to a very small and poorly cleaned bathroom. Tambo Investments, the third party that PDP (the third party of the banks) hired to implement the Bim advisers' strategy, is,

[214] Latour 2005, see Chapter 4 for a discussion on this.

as I mentioned before, a small business which, including him, has less than five permanent workers. It employs, however, many others in different, less stable ad-hoc regimes, that of what they often referred to as *colaboradores* (collaborators).[215]

Although the language of collaboration is part of the contemporary mainstream work language, and 'collaborator' can refer to anyone, its use also helps to flatten hierarchies of labor. Collaborators working as Bim advisers earned minimum wage and worked six days a week, transporting cash in areas where banks don't venture their offices. A 'collaborator,' in this context, is a euphemism for worker, because a collaborator often carries a workload equivalent to that of a permanent employee but lacks the associated benefits (health insurance, maternity leave, vacations). The collaborator status also often signals a more temporary, limited role. Depending on the projects/contracts load that the company (Tambo) manages at any given time, they hire these temporary workers, like the Bim advisers, for variable periods of time and in different payment arrangements.

The proliferation of colaboradores in the last decades instead of workers in supposedly more formal settings –like offices instead of the streets full of vendors and cash transactions-, is a perverse result of economic public policy enacted in the name of formalization and inclusive growth in many countries not just Peru. In the last decade of the last century, proponents of economic 'liberalization' or 'flexibilization' in the country, just like in other places, "credited the absence of labor laws and regulations—informality itself—as key to its creativity, generativity, and potential" and business elites in the country "held labor laws and due process" of the most organized economic sectors as "an impediment to innovation" (Irani 2019: 42). Thus, labor and business laws were loosened as part of

[215] Interestingly, this is the same term that Dionisio Romero Paoletti used in his open letter after the suitcases full of cash scandal, to address everyone related to the companies he represented. See Chapter 3.

neoliberal reform packages starting in the nineties, and processes 'simplified' to the detriment of workers.

In the Peruvian context and in a retrospective view, these processes benefitted, first and foremost, the *empresarios* (businesspeople) dwellers of the country's centers but were presented at the time within the dominant wishful thinking of the neoliberal 'trickle down' (*chorreo)* metaphor, in which this flexibilization of labor laws was expected to specially benefit *microempresarios* or *emprendedores* (micro entrepreneurs) dwellers of its peripheries. In the nineties and early two-thousands, as these reforms were rolled out, economists and other development experts' local jargon was that of MYPES (*micro y pequeñas empresas*, micro and small businesses). The predominant imagination/ideology was that MYPES were the "great engine of history," and when that term lost traction, practitioners turned into talking about *emprendedores*—a term that, by the time of my fieldwork, had been reinvigorated with the new label 'the everyday full-time fighters.'[216]

The paradox of this global development quest for formality via regulatory 'flexibilization' is that these deregulation reforms reduce labor laws' constraints and due process for business with the purpose of lowering the formality bar to, like an economists' tongue twister, *bring formality closer to informality in order to formalize informality*. In other words, it seemed that experts on the centers of the 'formal economy' were in search of the minimum acceptable level of formality to keep the economy growing, that is, an *efficient* level for growth purposes. The microfinance field is an example of this quest.[217] Around the 2010s, this search expands through 'financial inclusion' or the incorporation of the poor's money into the formal economy through the banks' networks.

Tambo, thus, is an entity of variable size; it expands or shrinks in collaborators depending on the tasks at hand. Importantly, Tambo, the relatively new, and entrepreneurial small business that

[216] I thank the comments of sociologist Rafael García on this.
[217] I return to this later in the chapter.

Dylan runs, has a tremendous responsibility in making Bim work. It is the entity with the smallest operational capacity and budget in this digital-financial endeavor and oversees one of the most crucial tasks: bringing users (and their money) to the banks' mobile money system.[218]

Dylan mentioned that while the best filter for him to pick advisors was their Christian church affiliation (making them money missionaries of sorts) the first filter when recruiting collaborators to work as Bim advisers was economic.[219] To administer the money of this project, the advisers needed to open a *Bim Cuenta General* (General Account) on their phones, tied to one of the more than twenty-five Modelo Peru's bank partners. To do so, they either had to open a new bank account with one of these financial institutions or to already have an existing account, with no outstanding debts with any financial institution. Similar to the merchants enrolled as bank agents, as previously described, the Bim advisers needed to be *formal enough*—having active bank accounts and no pending debts—to promote the formalization of 'the poor' via the banked digitization of their money. Ironically, as we will see later in the chapter, promoting the formalization of these constituencies also implied facilitating digital channels for their banked indebtedness.

At the same time, Bim advisers had to accept labor conditions that were less formal than those of the central team of engineers and managers at PDP. This situation highlights how the dominant understanding of formality at that time was becoming closely tied to banking. In other words, the labor required to financially include 'the poor' in the formal circuits of finance could remain informal (lacking more permanent contracts and their associated rights) as long as those

[218] PDP managers believed that by engaging local merchants as Bimmers to, in turn, spread the word and socialize the use of Bim among their clients, they will create, in marketing parlance, a critical mass of Bim 'early adopters'. The goal of the Bim's advisers' strategy was to reach a threshold in which the rate of adoption of this technology among the unbanked was self-sustaining.

[219] Due to time constraints, I didn't explore the evangelical side of this mission. All Bim advisors were selected from Christian churches (not Catholic).

performing it were already banked. This banked status made them more 'formal' than those participating in cash economies and who were the 'beneficiaries' of this financial-digital endeavor.

Every day, at the beginning of the day, Tambo Investments' collaborators working as Bim advisers gathered at this office to prepare for the day's work. At least seven of them, including Christian, Melissa, Miguel, and Samuel, who I would join with Dylan that day at Lima Norte, were already there that morning getting ready to that day's visits to shopkeepers. Although some of the advisers that Tambo remain the same as in 2017, this is a new set of collaborators, not the ones I met a couple of years ago; it is not a position meant to become a stable job as the need of personnel varies according to demand, the payment is equivalent to minimum wage, and people circulate through it relatively fast.[220] After I greeted Tambo's team, I accompanied Dylan to his desk where we picked up some Bim's marketing materials that the Bim advisers were requesting, and waited while he coordinated with Yeni, his wife/accountant, the preparation of a name badge for me.

Bim advisers have two main tasks during their daily rounds. Their first task is to convince shopkeepers, through monetary incentives schemes, to join as 'Bimmers'— a type of expert users who assist final users with Bim transactions.[221] By 2019, when I did a second round of field visits to shopkeepers with the Bim advisers, the range of transactions that Bimmers could perform on behalf of their shop clients had expanded from airtime top-ups to include tax payments and cash-ins for microloans payments.[222] I will discuss these new 'functionalities,' as engineers called them, in this

[220] For the future: Tambo agreement with Cesar Vallejo University so advisers could pay less monthly to pursue college studies while working for Tambo.
[221] Engineers describe Bimmers as a special case in the system ("una casuistica especial en el sistema"), akin to Microsoft's MVPs (Most Valuable Professionals). Unlike regular users or agents who handle cash-in/out transactions, engineers imagine Bimmers as higher-level, VIP users who promote Bim's use among their clients, and they view them as a temporary seeding strategy to boost transactions in Bim. More on this on Chapter 4.
[222] My long-term fieldwork was in 2017. I returned to Lima for two months (July and August) in 2019 to do additional fieldwork.

chapter, as these services were the ones that prompted the shops' clients to ask for physical receipts as a more 'solid' proof of their payment for their personal records.

By performing these transactions on behalf of their shop clients, whether they are unaware of this mobile money option or less experienced in using it, Bimmers help increase Bim's 'transactionality,' while receiving monetary incentives in return, as detailed in Chapter 4. In offering to perform these transactions via Bim for their shop clients, Bimmers also spread awareness of this technology in the peripheries where it is expected to function—or such is the expectation of the engineers overseeing this lubrication strategy.

The second task involves weekly maintenance. Bim advisers need to ensure that the Bimmers remain well-supplied with digital tokens so that they are always prepared to assist potential Bim end-users. This second task of the Bim advisers is what I refer to as the role of mobile HTMs (Human Teller Machines) feeding the Bimmers –who act as stationary HTMs of sorts. The Bim advisers go around collecting the Bimmers' cash and sending digital tokens to their wallets in exchange, and these digital funds enable the Bimmers to perform services for their clients (top-ups, tax payments, cash-ins for microloans repayments).[223] Then the Bim advisers had to regularly visit bank agents (as shops in the same neighborhoods they were doing their daily visits) to deposit the collected cash back into their Bim wallet accounts, allowing them to continue their rounds supplying digital currency to shopkeepers as Bimmers.

Besides these two well-established tasks, a subset of Bim advisers, at the time of my visit, were working for a different strategy to increase transactionality: a microcredit pilot with Financiera Compartamos, one of the more than twenty financial institutions partnering in Modelo Peru and connected via its mobile money infrastructure Bim. In practice, the task of Bim advisers assigned to

[223] The microloans function is actually a cash-in so the user can pay directly from their Bim wallet the amount owned to Compartamos, the financial institution partner of Modelo Peru that is exploring this possibility via Bim.

this pilot was similar to the second task listed here: to ensure that the Bimmers remain well-supplied with digital tokens so that they are always prepared to assist potential Bim end-users who are microloan holders with Compartamos. In practice also, this new strategy involved both commissions money (earned by Bimmers) and pre-fund money (supplied by Bim advisers). Furthermore, it involved yet another type of money: microloan repayment money, and I will return to it soon.

In Tambo's office, through a geolocation App on their personal smartphones, the Bim advisers review every morning the route and number of shops they were expected to cover in that day's round. And, importantly, they received in their smartphones' Bim wallets their daily allocation of digital money to be used in their visits to shopkeepers. They repeated this process every morning, six days a week. Sunday was their only day off. They received in their Bim accounts eight hundred soles (US$ 200 in July 2019). They called this action *prefondeo.* Translated as pre-funding, it means that Yeni, Tambo's accountant, topped up the Bim advisers' mobile money wallets on their phones, that is, she sent money from Tambo's Bim wallet account into each of the advisers Bim wallets so they could then go visit the shops and act like a sort of cyborgian and mobile Human Teller Machines (HTMs) and, in turn, fund the mobile wallets of the shopkeepers enrolled as Bimmers in exchange of their cash.

As one of the Bim advisers named Christian merrily said to me during our walk later that day from one shop to the other: "We are like the Hermes armored trucks that transport money and provide funds (*fondear*) here and there" (see Figure 5.2). As if they were armored trucks, indeed, but on foot and without an engine and the protection of a full metal frame, bullet proof jackets and guns, the Bim advisers visited merchants (*comerciantes* or entrepreneurs or everyday full-time fighters). They transferred money in the form of digital tokens from their own Bim wallets to the merchants' ones and received from the merchants the same amount in cash in return. Once funded by the Bim advisers, the Bimmers could then perform several functions for their clients (top-up phones, tax

payments, microloan repayment cash-ins) for their clients in exchange of their cash, and, in this way, act as cash in points for Bim.



Figure 5.2. Hermes armored trucks transport cash from and to ATMs and banks (like BCP in the second picture) in urban and wealthier areas than the ones the Bim advisers walk daily. In the second picture we can also see three 'armored humans' (with bullet proof jackets and with guns on the side) securing the operation. Miraflores and Barranco districts in Lima city, July 2023. Photos by the author.

PREFONDEO: money to lubricate Bim's pipes

Tambo *prefunded* the advisers' wallets every morning so they could go around funding (*fondeando*) in turn the shopkeepers who they called the 'Bimmers.' When the Bim advisers ran out of prefunds in their Bim wallets and had all their pockets full of cash received from the merchants, they took, like the Hermes trucks, all that money to the nearest bank. Because in the areas they visited –the peripheral Limas- there were few bank offices, they mostly brought the cash to specific small shops in which shopkeepers also act as bank intermediaries –what bankers call correspondent agents or cashiers. There, the Bim advisers gave the cash collected from other merchants to the shopkeeper acting as *agente* and he/she deposited the same amount back in their Bim wallets.[224]

In other words, advisers *re-fund* their own Bim wallets during the day so they can continue walking and visiting shopkeepers and supplying them with digital money in exchange for their cash. As I witnessed that day and others that I walked with them, they repeated this procedure many times per day as they moved through their rounds in their assigned neighborhoods. By 5 pm, it was time to finish their daily rounds and *"cerrar caja"* (settle transactions). Bim advisers must end the day having in their Bim wallets the same amount (US$ 200) that they received in the morning. Their workday ended when they transferred this amount back to Tambo's Bim wallet account.

At PDP's headquarters, Abel, the manager who conceived this Bim advisers' strategy that Tambo implements in the field, explained to me that Bim advisers' prefund money is money that is injected into the 'digital ecosystem' to bring more money to it. Its function is to work during the day circulating among Bim wallets, and at the end of the day, the Bim advisers must return the same amount back to the office. So every morning, *prefondeo* money enters Bim's digital ecosystem and it

[224] See chapter 4 on this as well.

leaves it by the end of every workday. In its daily circulation though, it attracts more money to it, or, as PDP managers, most of them engineers, would say, it lubricates (*aceita*) its pipes.

The money Bim advisers use is, thus, very specific, perhaps what Karl Polanyi (2001 [1944] & 1957) termed as "special-purpose" or "token money" to differentiate it from "all purpose" money or "commodity money".[225] Polanyi referred to special-purpose money as the one of non-modern societies in which "different kinds of objects are employed in the different money uses", which are commonly listed as: a means of exchange, a standard of deferred payment, a unit of account and a store of value (1957, 264). Special-purpose money uses "are instituted independently of one another" in such way that there is "no contradiction involved in "paying" with a means with which one cannot buy, nor in employing objects as a "standard" which are not used as a means of exchange" (Ibid.).[226] Later, sociologist of money Viviana Zelizer used this idea of 'special-purpose' money to contest economists' common idea that modern money is "unburdened by ritual or social controls" and to differentiate, despite its physical unquestionable homogeneity, its various social meanings and uses (2017: 22).

Contrary to the common idea that 'a dollar is a dollar', Zelizer argued that there are qualitative distinctions that differentiate, for instance, bribe money from wages and wages from tips, allowances from donations, and so on; or 'death monies' (as in money allocated to buy insurance for

[225] On token money see Karl Polanyi 1944, On special purpose money see Karl Polanyi, "The Economy as an Instituted Process" in *Trade and Market in the Early Empires,* 1957. Also see Viviana A. Zelizer *The Social Meaning of Money: "Special Monies"* American Journal of Sociology, Vol. 95, No. 2 (Sep., 1989), pp. 342-377, and Jérôme Maucourant. The substantive economy of money: Karl Polanyi in the tradition of "old institutionalism". 1995.
[226] For Polanyi, "modern money", that is the money used in economies defined as market economies, is "all-purpose" because the same money is used as payment and as a standard and else. But he points out that money as a means of indirect exchange within a market economy is the definition that governs the rest - he called it a 'catallactic' definition-, and "other uses of money are merely unimportant variants of its exchange use, and all money uses are dependent upon the existence of markets" (1957, 264). Later, the Austrian-British economist and proponent of free-market capitalism Friedrich Hayek popularized the term Catallaxy as a synonym of market order. See: F.Hayek, "Law, Legislation and Liberty" in The collected works of F.A. Hayek, Volume 19, 2022, Volume 19, p. 309-310

proper burial) from living expenses (as in money used for clothing and food) (Op.cit, 181-4). In fact, for her, people but also corporations and governments, are all the time engaging in 'earmarking practices,' that is, they separate money for different functions attached to a variety of social relations, and earmarking is not limited to money in cash form but also in digital form. Special-purpose money can be identified whether because of a restrictive use (only for the purchase of specific goods, such as with EBT cards), or because of special modes of allocation and forms of exchange (gift money, life insurance), or because it has designated users, for instance, as conditioned cash transfer programs directed to poor populations (Op.Cit., 21).

In the case of Bim, while prefondeo money is exactly the same as the other money that circulates in the digital ecosystem (as a number of Soles, the Peruvian legal tender), this money could be thought as special-purpose or 'special monies' to use Zelizer's term, because it is earmarked as prefondeo*;* it is *working money*. Its use is restricted to a particular set of rules, designated users (Bim advisers) and spaces of circulation (in and out of Bim's digital pipes) and for a specific purpose: it daily works by entering and leaving the Bim digital ecosystem and through its circulation, it brings more money to it (that of the Bimmers, and through them, that of their 'unbanked' clients). Prefondeo money is defined by these conditions but, remarkably, its materiality does not define it. At different points in time during any given working day, it shifts from digital to cash and back to digital.

Prefondeo money different than payment, per diem and fondeo money

Prefondeo money is not the same as *payment* money because it is not for the Bim advisers to spend it. Bim advisers receive a monthly payment and a daily smaller amount of money as per diem (less than $15). The function of this per diem money is to be spent on transportation and lunch, and,

interestingly, that sum is provided in cash. Per diem money is spent in the bodegas and small restaurants (*Menus*) in the areas they walk every day; it is cash injected back into the cash economies that they are digitizing through Bim. While per diem is not money directly used for lubricating Bim's pipes, it does so indirectly as it is injected back into the universe of bodegas and small menu restaurants that the advisers visit every day.

Prefondeo money is not only different than per diem money, but also differs from *fondeo* money, the latter is an exchange of cash for digital tokens. Prefondeo money is money that Bim advisers receive every day in their Bim wallets, sent by Yeni, Tambo's accountant, on behalf of PDP. They don't need to give cash in return, it is working money. When shopkeepers ask Bim advisers to fund their Bim wallets, they need to give back to them the exact amount they ask to be funded, in cash. This transaction (cash for digital tokens) is done simultaneously to the one done on the phone (Bim adviser sends digital tokens from his/her mobile wallet digital tokens to the shopkeeper's Bim wallet). Similarly, when the shop's (unbanked) clients come with cash which they want to convert into digital for a specific transaction, the shopkeepers accept the cash and send the equivalent amount in digital tokens, using the tokens previously received from the Bim advisers' pre-fund money.

Thus, the function of *prefondeo* money is to fund (*fondear*) the shopkeepers, to ensure that they have enough digital funds in their Bim wallets to use with their shops' clients. In other words, *prefondeo* money serves as a magnet for *fondeo* money, which is essential for converting the cash of shops clients into digital currency and integrating it into Bim's digital ecosystem. *Prefondeo* money functions akin to *temporary working capital* managed by temporary workers, namely collaborators or Bim advisers. Each day, by 5 pm, before banks settle the day's transactions in Bim, prefondeo money exits the system entirely, only to resume its role the following day, replenishing the system with new funds. In contrast, *fondeo* money circulates between Bim wallets of Bimmers and their clients; remaining within the digital ecosystem for an extended duration, or at least that is the expectation.

Prefondeo money lubricates Bim's pipes and is a magnet for fondeo money, the funds that Bimmers use to serve as points of cash in for their customers. Fondeo requires the shopkeeper to anticipate how much digital money they'll need to circulate through Bim in a particular time frame (a couple of days, a week) before the next Bim adviser visit. If they run short, they lose business, but if they request more than what they end up using, they have funds sitting idle in their wallet, which cannot be mobilized in other ways for their business. Since these are mostly subsistence businesses, their financial maneuvering margins are small. But why do merchants want to participate as Bimmers in the first place? To convince shopkeepers to act on behalf of Bim, as Bimmers –and by extension, the partnership of banks—Bim advisers mobilize another type of money: commissions.

COMISIONES: money to attract Bimmers which in turn attract money to the system

The hook to become a Bimmer is *comisiones* or commission money, yet another 'special money' (Zelizer 2017) that engineers at PDP deployed for Bim to start functioning properly. Engineers designed the strategy of Bim advisers as local *promotores* (promoters) of mobile money back in mid-2016, and they explained them to me as responsible for convincing and converting merchants into Bimmers by offering them attractive *comisiones* or monetary incentives (*incentivos*). In coordination with Dylan from Tambo Investments putting together the actual team of 'collaborators' for it, engineers organized the *comisiones* as micropayments each time a Bimmer facilitated a transaction on behalf of their clients using Bim.[227]

Specifically, engineers started their experimentation with commission money by granting it each time a Bimmer provided a cellphone top-up service for their clients using the Bim wallet instead

[227] I described the commissions' monetary value and operation in detail in Chapter 4.

of using the cellphones and systems of each mobile network operator. They chose phone top-ups (*recargas*) because, technically, Bim was enabled to perform that action, as it was an 'interoperable platform' connecting not only most Peruvian banks but also most mobile network operators. They also chose phone top-ups as the service to grant a commission because both merchants and clients were familiar with this operation, as I elaborated in the previous chapter. These transactions were ones that end-users could eventually perform by themselves once they were convinced to open a Bim wallet and become Bim users. But in the meantime, they could be considered 'services' mediated by Bimmers. Bimmers are thus a sort of 'service providers' acting on behalf of a partnership of banks but not properly hired by them.

Engineers often used the analogy of Bimmers as Microsoft's MVPs, or Most Valuable Professionals. These MVPs are experts in Microsoft environments who, driven by their passion for the technology and their expert-level use of it, help the company stay updated, maintain its market share, and profit. They are not formally hired by Microsoft, nor do they receive payment, but they enjoy other benefits and the status that comes with the role. For engineers, the idea is that Bimmers, by assisting final users with transactions in Bim, would similarly spread their enthusiasm for the technology.

However, unlike Microsoft MVPs—who are identified by the company precisely because of their active use of its systems—this enthusiasm does not already exist among shopkeepers. Rather, it must be cultivated. Therefore, monetary incentives are provided to entice their support. The absence of contracts allows the bankers to unilaterally change the incentive amount that shopkeepers receive whenever they choose. For instance, as described in Chapter 4, the commission value initially started at one sol but was gradually reduced to forty cents per transaction, eventually stabilizing at a rate closer to the telecoms' standards for top-up commissions. As the incentives diminished, so did the enthusiasm of the Bimmers.

But Bim continued to reinvent itself, largely through the efforts of its engineers at PDP, by forming new alliances and exploring new functionalities in the hope of creating the 'ecosystem' they envisioned for Bim—one where people could not only send money from person to person (P2P) but make a variety of digital payments, such as Person to Business (P2B), Person to Government (P2G), and Business to Government (B2G). For instance, from 2017 to 2019, the range of transactions that Bimmers could perform on behalf of their shop clients had expanded from airtime top-ups to include tax payments and cash-ins for microloan repayments. Bimmers receive commission money for each of these services, though the rate is not flat or permanent, as incentives are provided by the parties pushing those services. For instance, top-up commissions are part of PDP's strategy to position Bim, funded by the banks' partnership. Tax payments (P2G) are organized by PDP for SUNAT (the Peruvian IRS) and this public entity handles that incentive. Microloan repayments (P2B) are an initiative devised between PDP and only one of the partners of Modelo Peru, a financial institution called Compartamos (which later would concentrate most of its shares, a matter I will return to later on the chapter), and this entity provides that incentive.

Comisiones money takes the same form of digital tokens deposited in Bim wallets, but I suggest it can be seen as a 'special money' because it is earmarked as an incentive for completing a particular task (or service) by specific—and previously identified and enrolled—users (Bimmers). It is also earmarked through a particular type of delivery: a monthly sum of individual micropayments directly deposited into the Bim wallets of each merchant acting as Bimmers. Like *prefondeo,* it is also a type of 'working money' that lubricates Bim's pipelines. It seeds money into Bim's 'digital ecosystem,' as engineers used to call it, and potentially—or so the promise goes—it incentivizes its use within that ecosystem. For example, in the engineers' vision, once the money enters the ecosystem, it never leaves; Bimmers could reinvest it as fund money to perform more operations for their clients, or they could use it to top-up their own phones or pay their taxes.

In the field, I witnessed that some did use the money as capital to reinvest and continue earning more commissions. However, many wanted to cash out the money, converting the digital tokens back into cash, and frequently asked the Bim advisers how to do so. As the system was devised to keep money circulating in digital form through its pipes, the cash-out process was not so straightforward and was difficult to implement technologically with the bank partners, much to the frustration of PDP's engineers—as well as among Bimmers and Bim users—since access to their money in physical form was fundamental to their trust in the system.[228]

Interestingly, and speaking of trust, I observed that one key thing that Bim advisers constantly downplayed or straightly didn't mention in their interactions with the shopkeepers when enrolling them as Bimmers was the very fact that Bim was a platform formed and owned by a partnership of banks. This omission was facilitated by the fact that Bim is a brand that comes from a partnership of banks, but it is not explicitly connected to any bank in particular. Dylan and his team of Bim advisers were very aware that their targeted audience did not trust banks.[229] They considered that for Bim to work and gain the trust of both merchants' and their clients as a platform for managing their money, it was sometimes necessary to minimize or plainly hide the fact that it came from the banks. Or to postpone the delivery of this crucial piece of information for as long as possible, allowing shopkeepers to try Bim without their mistrust of banks tainting their encounter with this new technology.

However, this realization was ultimately unavoidable, especially as Bimmers, enticed by incentives, quickly reached the legally established limits for monthly transactions and amounts for mobile wallets. To expand the capacity of their wallets, they were then required to complete

[228] This was the case also because Bim wasn't becoming an environment or ecosystem for daily transactions as expected at that time, so users could not see the value in keeping their money in digital circulating through Bim. It was a good idea, a great model, but it was missing parts to make it become such. Yape, for instance started growing exponentially when they included the QR option.

[229] I have addressed this issue in Chapter 2.

paperwork and provide signatures, as I will examine soon.

Lubrication strategies: one time gifts vs commissions

Comisiones money is different from special monies that seed a system as a one-time event, though. I am thinking, for example, in travel miles rewards credit cards which gift the new members with sometimes thousands of miles upon enrollment, or the "Venmo $10 Sign-Up Offer," which automatically gives each new user of this digital wallet a US$10 bonus.[230]

Lubrication as a one-time event was, in fact, PDP's first strategy. In the months leading up to Bim's launch in February 2016 and for some time afterwards, the banks partnering in Modelo Peru conducted a preliminary round of merchant enrollment as Bim end-users and some as Bim agents in peripheral Limas, with their own *promotores* or advisers, their own seeding strategies, and competing for numbers. As I witnessed in the field, "which bank had enrolled more people?" was a critical question and relevant metrics discussed at PDP monthly engineers' meetings (*Comités Operativos*) with all the banks' representatives in late 2016 and early 2017. However, less than 5% of those initially enrolled users (counted by the thousands) ever used the platform. Despite this opening strategy, Bim experienced a very slow, almost inexistent, take off. Nominally, Bim had users, but they were not active: they were not finding any real use or purpose for the Bim wallet, and thus, their money was not 'riding the rails' of this new digital payment infrastructure.

This situation is familiar to professionals and scholars of payment technologies, and lately (early 2020s), it has become particularly noticeable with cryptocurrencies. A current problem in the crypto world is that no one needs to use these tokens; for the vast majority of people, there is no

[230] https://help.venmo.com/hc/en-us/articles/4408873796499--10-Sign-Up-Offer-Terms (last accessed 03/15/2023.

social context in which they are useful and accepted as method of payment (Swartz 2018; Brunton 2019). These are monies that in theory work fine but, ethnographically, there is no evidence of massive use for other purposes than as speculative commodities, as a vehicle for illegal transactions, or for scam schemes (Swartz 2022; Howson 2023). And yet, because of that, there are plenty of contemporary examples of 'lubrication' projects—seeding Apps and payment systems with existing money (what I am calling 'working money') to attract users and more money to them. These strategies are now also being tested on 'the poor' as the new crypto-financialization and extraction frontier (Rosales et. al. 2023; Howson & de Vries 2022; Jutel 2021 & 2023).

Take for instance, the case of El Salvador, where President Nayib Bukele proclaimed bitcoin the country's new official currency along with the existing one (US dollars). Bukele claimed the shift "would enable the country's unbanked majority to access credit, savings, investments, and secure transactions, whilst helping the two million Salvadorans living in the US to send remittances home without paying fees to foreign money transmitters" (Howson et. al., forthcoming). It also allowed the country to have some leverage over its dollarized and US-dependent economy. To promote the use of the new legal tender, the government launched a national bitcoin wallet App named Chivo, topped up with a $30 USD one-time incentive that each Salvadoran received upon signing up. According to a report by the US National Bureau of Economic Research, less than 60% of Salvadorans downloaded the Chivo Wallet, and only 4 out of 10 continued to use it after spending the $30 incentive, mostly to store dollars and not bitcoin (Alvarez, Argente & Van Patten 2023).[231] The App is not widely used to receive remittances either, but it has been infected with technical glitches as well as numerous scams to steal the government's monetary incentive (Vasquez 2022).

[231] It also meant that, in practice, from September 2021, all Salvadoran merchants with an internet connection were legally required to accept Bitcoin (See Howson, 2023).

Returning to Peru and Bim, back in mid-2016, the managers and engineers of PDP found themselves, like in the more current cryptocurrency examples, with a payment infrastructure in search of users. They had been so busy technically setting it up, also legally drafting and re drafting through their lawyers the agreements and contracts between banks and with the telecoms, and doing the negotiations with the state regulators as well as the updates and design fixes with technology providers that perhaps they overlooked this aspect—or assumed it would 'naturally' work as it was a 'good' technology, as discussed in Chapter 2. They had the Bim pipelines or rails ready, they were interoperable, approved by the government and all institutions involved (mobile network operators and banks alike), but they were empty: they couldn't get people to use Bim so they can become financially included and, by bringing their money to Bim's pipelines generate profits for the banks.

Engineers realized that the task of creating and securing Bimmers (or cash in points) needed to be sustained with a more permanent presence of Bim representatives and incentives than single occurrences. This marked the beginning of the Bim advisers and their original task: to persuade merchants to become Bimmers, who would receive commission money each time they performed a cellphone top-up transaction on behalf of their clients, instead of just a one-off incentive upon enrollment.

This strategy served both short-term and long-term purposes. In the short-term, and in 'real time,' Bimmers were transforming their clients' cash into digital money on Bim, a banking infrastructure, rather than on the telecoms' systems, and thus, lubricating its pipes. With each transaction Bimmers earned a commission for themselves. These micropayments were directly deposited into the balance of merchants' Bim wallets digital money at the end of each month, again and still in the short-term, these were lubricating Bim's pipes. The expectation was that merchants

would then circulate this money within Bim's 'digital payments ecosystem' for other transactions, rather than cashing it out (or turning it back to cash), as most in practice, did.[232]

Bimmers, cash, and other physical materialities working for the digital

Bim advisers and Bimmers mobilize various objects alongside cash—such as contracts, ads, and physical receipts—for the digital to work. In this section, I examine these materialities by presenting scenes from fieldwork, focusing on interactions among advisers, shopkeepers as Bimmers, and myself. I concentrate specifically on our visits to two shopkeepers: señora María (in Lima Este) and señora Heroína (in Lima Norte). This exploration also introduces another type of service that Bimmers perform (microloan repayment cash-ins) and examines this type of money as distinct as the ones previously described, as well as the ways it lubricates the mobile money system.

Señora María: a 'Bimmer star,' commissions and contracts

La señora María sells snacks, some basic groceries (like eggs, milk, pasta, cooking oil, tuna cans), a small selection of fruits (limes, avocados, bananas, tomatoes) and vegetables (onions, potatoes, garlic, lettuce, aji) and all kinds of sodas. She also sells fashion earrings, hair accessories and small toys or gifts. Her shop, located in San Juan de Lurigancho (East Lima), is the size of a single room, the one that faces the street. The rest of her house is located behind it. This is the room where the family has invested the most in finishing construction details, such as white tile flooring,

[232] See Lana Swartz and closed-loop payment systems, the walled gardens of the digital in contrasts with users' expectations and uses (2019, chapter 6).

glass retail display cases, and the walls wooden frames to hang some additional merchandise and a mirror (see Figure 5.3).[233]



Figure 5.3. Bim adviser funds Bimmer and also fills out some paperwork (Know your customer regulations) for the banks. San Juan de Lurigancho, February 2017. Photo by the author.

Eduardo, a Bim adviser, and I visited her that day, back in early 2017 when I took that picture, because she has been a successful Bimmer for a while—one of the 'Bimmer stars' for Abel, the engineer who created and monitored the Bim adviser/ Bimmers strategy on a weekly basis. In Abel's traffic light ranking methodology, described in the previous chapter, María scored high. In his color-coded ranking where red is the worst and dark green is the best, she occupies the highest place possible, completing more than one thousand top-ups per month via Bim. At that time, the incentive was one sol per transaction, regardless of the amount, so she was earning more than a thousand soles

[233] I got a glimpse of what the rest of the house looks like because I was pregnant at that time and she kindly allowed me to use the restroom, which was an exterior bathroom. The bathroom was located on a dirt floor and accessed by unfinished cement stairs leading to the rooms. The walls were made of brick covered with white paint. While it had a water connection to public infrastructure, there was no running water, so a large bucket was used to flush the toilet and to shower.

per month in commissions. Importantly, she easily reached this level of transaction volume via Bim because she was already known in her neighborhood as a telecom agent handling top-ups for different companies (Movistar, Claro). She had a steady clientele for those services, which she transitioned to Bim.

María is a natural in business—very welcoming, chatty and sociable. It is also clear to me that she and Eduardo have already developed a business-friendly relationship, evident in the familiar way they greet and smile at each other. While Eduardo performs the *fondeo* of her Bim account, she engages in small talk with me. She notices that I am pregnant and asks if I'd like to sit for a bit; "you must have been walking all day, you probably need to rest a little!" I nod, and she brings me a stool. "It's a girl or a boy?" I tell her it's a boy, and we have already discussed the children we both have. She then asks me if I want to keep trying for a girl. I say that maybe, and she half-jokingly half-seriously mentions that the infallible trick to having a girl is to conceive on the floor. We both laughed out loud.

María is very attentive to me, but that doesn't distract her from the business at hand. In the picture (Figure 5.3) we see María verifying on her phone that she has received the money Eduardo, the Bim adviser, just sent her in exchange for her cash as part of the *fondeo* operation. We also see some paperwork, a national ID (in turquoise), and a fingerprint stamp below it. María has reached the four thousand soles per month limit of the Bim wallet, as per national electronic money regulations. She has agreed to fill out and sign some paperwork that Eduardo brought to her today to transition her Bim account to a different one, which would allow her to move larger amounts of digital money without daily and monthly restrictions, while still receiving the incentive money or comisiones.

This new type of mobile money account is closer to a regular bank account and subject to 'know your client' or KYC banking sector regulations—requiring, as the picture shows, more formal

procedures such as filing paperwork for the banks, signatures, and ID verification. PDP and the Bim advisers call this type of account a 'cuenta de banco simplificada' or simplified bank account.

With this step, María is quickly becoming formally banked, but it doesn't mean she was not already familiar with digital transactions. Many merchants enrolled as Bimmers, like María, are also 'unbanked' (though they are becoming somewhat banked through their enrollment). As I explained before, this means that they do not have prior digital money in bank accounts to transfer as digital tokens to their Bim mobile wallets. However, to complicate it a bit, this doesn't mean that they haven't already dealt with digital tokens, as many have been acting as *agentes de recarga* (top-up agents) for mobile network operators since the early 2000s.

The key point here is that these digital tokens circulate within the networks of MNOs or telecom companies, not within the banking system, and they serve a specific purpose: topping up the lines of clients who come to their shops to request that service. This digital currency is not interchangeable with the mobile money being deployed via Bim by Modelo Perú, which is digitally stored under the control of banks, even though it still uses the pipelines of telecoms to circulate. As a top-up agent for telecoms, María has a long digital history, with digital traces of her transactional behavior. She was already digitally and financially legible for telecoms, but not for banks.

By using Bim, she is now generating data that banks can interpret and use to offer services to her. By signing the simple A4 form (without any official bank headers or stamps) that Eduardo personally delivered to her store, she is effectively accepting a bank account, albeit a simplified one, with one of the Modelo Perú partners.[234] As part of this banking process, Eduardo also verifies that

[234] When Bim users open their Bim wallets for the first time, they are asked to choose a bank that will administer their Bim wallet. Most users forget about this step, especially in the brickphone interface, which doesn't display that information. In the smartphone app, it is more visible. When Bimmers transition from a regular Bim wallet to a simplified bank account within Bim, they do so with the bank they initially selected, unless they call Bim customer support to change the bank their account is connected to.

the information she added to the form is accurate, corroborating it with that of María's national ID, which is also visible in the picture. Additionally, he has to take a fingerprint from her to include in the paperwork. Eduardo would then need to bring these simplified versions of bank account contracts to Tambo, the intermediary of PDP, which in turn serves as the intermediary of the banks. Tambo's manager, Dylan, would then scan and deliver the collected contracts from all advisers to PDP in digital form, which would then distribute them to the appropriate bank.

Thus, the Bim adviser here is not only mediating mobile money by acting as a mobile HTM (by funding Bimmers with digital tokens and collecting their cash); he is performing bureaucratic work on behalf of the banks without being a formal employee of any of them, not even of the third party (PDP) that runs their partnership. Bim advisers are 'collaborators' coming from the third party (Tambo) of the third party (PDP). This is an interesting labor shortcut; not only is the contract a simplified version, but the formal labor structures get simplified through these practices as well.[235] Thus, it constitutes another instance of corporate *recurseo*.

Not everyone is like la señora María: the refusal to sign formal contracts

Unlike señora María, I noticed in our visits to bodegas and our conversations with small merchants that there was a great deal of skepticism –and even mistrust – when they found out that banks were behind Bim's mobile wallet. Back when Bim was first launched in 2016, its system was designed for 'brickphones'—simple cellphones, not smartphones. It worked through the telecoms USSD channel, which displayed very simple menus (short texts) on the very small phone screen. While this USSD channel is available and can be accessed in smartphones (it's the same channel used by governments to broadcast emergency messages to a population over a specific territory),

[235] See also the fieldworkers of microfinance on Lamia Karim 2011.

most of the shopkeepers who became Bimmers didn't have smartphones; they accessed Bim using basic cellphones with keyboards.

When any Bim user first affiliates with Bim's mobile wallet, they must choose a bank to which their mobile wallet account will be linked. This is a very brief step that most people forget they completed afterward. Importantly, in the case of small merchants, as described in the previous chapter, the Bim advisers often handled this affiliation process for them without explaining the steps or making them aware that they were choosing a bank to be linked with. The advisers offered their help, the small merchants handed over their phones, and the Bim advisers proceeded to enter the required information, including their national ID number and the bank selection, and that was it.

But by 2019, the USSD interface had been already discontinued, and Bim is only accessible via an app, requiring a smartphone. Smartphones are also cheaper and there are many options available (what in Lima people would call 'the Chinese brands'). Telecoms constantly do promotions to spread smartphones use as well, and many merchants have one already. When merchants open the Bim app, it shows that they are affiliated with a particular bank, which they neither like nor understand. Bim advisors reply to their complaints and questions with evasive answers, trying to reassure them ("Don't worry about it, it's just a requirement of the system"). Nevertheless, some merchants simply refuse to work with Bim anymore once they become aware of this affiliation.

This situation became even more complicated with Bimmers that, like señora María, reached the transaction limit of four thousand soles per month. Bimmers start with a regular account just like any other user. When they hit that limit, Bim advisers offer them the chance to switch the initial "general account" to the simplified bank account—a necessity for shopkeepers looking to profit from their role as Bimmers. The problem is that to make this transition, merchants need to provide more information and sign a document, like María did, as the new account is a bank account and therefore subject to more stringent know-your-customer banking regulations.

During our visits, I observed that nobody wants to sign anything; the flow of the conversation changes abruptly when advisers physically present the A4 piece of paper. Small merchants are very suspicious of signing contracts, especially those that link them to a bank, even if the form has been simplified to the point of not having formal bank headers or those of their partnership. While, as described before, they are active informal users of bank services (via, for instance, bank agents), they don't trust banks to the point of delegating to them the control of their money (see Chapter 2 and 3).[236]

For Bim advisers, this is a significant challenge. They often spend considerable time convincing Bimmers to sign the form, sometimes requiring more than one visit. Sometimes Dylan, who hires and oversees the whole Bim advisers' strategy, joins the advisers in their 'contract' round, to help with this task and slowly go through the document with shopkeepers (see Figure 5.4).

The piece of paper waving in the adviser's hand, I suggest, instantly evokes/actualizes genealogies of race/class relations and the ingrained reaction against them. This piece of paper positions the shopkeepers as less educated than the advisers—who are often younger and more urban—and explicitly casts the advisers as intermediaries of banks. The papelito reorganizes the more quotidian and horizontal relationship Bim advisers and Bimmers have created over time into one of experts (or fieldworkers of the experts) and its 'beneficiaries,' who are assumed to be less educated and in need of improvement. Shopkeepers feel that they are at a disadvantage, that they can be fooled by the fine print in contracts, due to this literacy gap and the evocative power of the written word in the Peruvian imaginary.[237]

[236] Also see Peebles (2014).
[237] See Chapter 3 on this too and *las letras chiquitas de los contratos*, and debt as death.



Figure 5.4. Dylan, Bim advisers' general supervisor, and owner of Tambo, explains the contract to another bodeguera we visited that day, she is reluctant to sign, he listens to her concerns. Comas, August 2019. Photo by the author.

Literary critic Ángel Rama (1996) coined the term "the lettered city" (*la ciudad letrada*) in his examination of the power of written discourse in shaping Latin America societies and the role of cities in organizing the spatial distribution of these hierarchies of power. Cities concentrated the state's institutional and legal powers within elite groups of urban *letrados*, extending control from these urban centers to other areas through the written word.[238] Literacy was, thus, intimately related to the exercise of power. For Marisol de la Cadena (2023), the coloniality of power (Quijano 2005) was expressed in geographic terms within the Peruvian imaginary: the further from the city, the less literate, and consequently, the less white (or the more Indian) the population." This lettered cartography, for De la Cadena, "overlapped with the official geography of the country; accordingly, greater degrees of literacy existed in coastal cities, lesser in the highlands, and less even in the Amazonian region," thus, "distance from literacy amounted to capacity to reason, and indeed to reason politically, also measured geographically."

[238] The right to vote was extended to illiterate individuals—indigenous people—only in 1980. Women who were not illiterate, not rural, not indigenous acquired that right earlier, 1955. Public education gradually expanded throughout the 20th century from the city to the countryside, especially under Velasco's military regime.

As dwellers of the peripheries where these technologies are designed, shopkeepers are reminded of underlying and still prevalent hierarchies by this piece of paper. Its sudden presence undermines the trust that Bim advisers have worked hard to build through their visits. As I mentioned before, the advisers often downplay that Bim comes from banks, because they, who not only work in the peripheries but come from them, understand that banks represent these elites, centers of power, and historical connections that trace back to the time of the haciendas, a world of lettered lords and illiterate serfs.

Those who do agree to sign remain skeptical, not fully comfortable or convinced. They are uneasily and precariously included in this financial arrangement, staying in it as long as they perceive a monetary benefit. It seems to me that they also stay because, while they don't trust the banks, they do trust the Bim advisers. They serve as the human interface that the technology needs to function, at least experimentally, in these peripheries—on the margins of the incorporated market economies and far from the centers where it is constantly imagined and represented. Through their systematic presence, the advisers have created a sense of transactional community for Bim, without the need of the mediation of written documents—unless they are requested by the Bimmers, as we will see shortly with the case of the physical receipts for transactions.

Señora Heroína: a multifaceted nonexclusive Bimmer

La señora Heroína must be in her late forties or early fifties. She is a trained *técnica de enfermería* (nursing assistant) and worked in the public health system (Essalud). She runs a small shop that she opened less than two years before our visit that day in August 2019 (Figure 5.5). She tells me that she worked for nine years in a clinic that was part of the public insurance system. But

then there were some changes at work, and she moved to the private sector, which was more profitable

> "But the years passed, and it took three hours by bus to get to work, and I used to get home at midnight. One prefers to rest a little. My son told me, 'No mami, you better dedicate yourself to something else [like starting a corner shop in her house]. Well, I'll be honest, I didn't like that idea very much. I haven't been involved in this before, but you learn everything in this life.".



Figure 5.5. The front of Señora Heroina's shop. Comas, August 2019. Photo by the author.

Her business has multiple exterior signs and ads displaying the different kinds of services she offers—some ads were supplied by telecoms (Entel, Claro,Movistar), some by Bim advisers. As she tells me, "yo hago recargas, yo hago impresiones, yo hago escaneos. Yo hago librería" (I do top-ups, printing services, document scanning, and sell office supplies). And because she is also a nursing assistant, she also gives shots (*inyectables*), but that service is not advertised; it is only for people who already know her, and they come to her store for that. Dylan, who is also listening to this conversation calls her *multifacetica*, and she is indeed multi-faceted—a jack-of-all-trades kind of

person. She is the epitome of *recurseo* and the fleshed-out poster image of the 'full-time fighter' of Modelo Perú, working, as she mentions, from seven a.m. to nine p.m.

Just like with señora María, when our conversation strays from Bim, it revolves around our children. They don't mention their partners, nor do they ask about mine; men are not the focus. This is not surprising, as many of the mujeres bodegueras (women merchants) are heads of households. According to the Asociación de Mujeres Bodegueras del Perú (Agremub), there are more than five hundred thousand bodegas in the country, and 70% of them are run by women.[239]

When it comes to recargas (top-ups), Heroína is a Bimmer but also works with Movistar, one of the telecoms. In our visit, with a couple of Bim advisers (Melissa and Christian) and with Dylan who oversees the whole strategy, she explained to me that:

> "Through Bim I top up Bitel, through Bim I pay the RUS [a type of tax], through Bim I top up Claro, though last time I had problems with Claro, I had a lot of problems, and I couldn't top up Claro via Bim, and when there is a problem topping up people's phones, people won't come back. That's the truth, I have to be honest: that's a problem. Through Movistar I pay for Movistar landlines and Movistar and Entel cellphones."

In her explanation we can see the densely populated digital world she manages. She mentions Bitel, Claro, Entel and Movistar (all telecoms), noting that their top-ups can be administered either via a Movistar interface or through Bim. With Bim, she can also assist her clients in paying the RUS, a type of tax for small businesses, and earn a commission on these transactions as well.

She skillfully navigates all available options and providers to her convenience, using the platform that generates more incentives for her to perform transactions for her customers. This must

[239] See: https://especial.larepublica.pe/la-republica-sostenible/2023/08/14/alrededor-del-66-bodegas-a-nivel-nacional-son-administradas-por-mujeres-1260560 and also https://stakeholders.com.pe/ciencia-innovacion-y-tecnologia/innovacion-y-emprendimientos/mas-de-350-000-bodegas-en-el-pais-son-lideradas-por-mujeres/ and https://elcomercio.pe/economia/opinion/las-bodegas-y-su-importancia-para-la-economia-por-augusto-bauer-opinion-columnasceo-ceocolumnas-grupo-aje-bodegas-bodegueros-noticia/

be continuously fine-tuned, as it is ever changing: she recalls that she has recently experienced problems with Claro top-ups via Bim, and the high cost she pays resulting from these issues is that it leads to clients not returning to her shop but instead going to a different one for their digital payments' service needs. Señora Heroína continues her explanation, which now seems less directed at me and more like a scolding aimed at the advisers present that day:

> "Before I did Movistar top ups with Bim but since I found out that I no longer receive an incentive for it, I said, 'no more, that's it: I'm divorcing Bim.' I was honest, and I told Melissa and I told Samuel, and I told everyone who came [the Bim advisers]: 'I have now divorced. I'm honest, I must be like that because I'm not going to cover you up.'"[240]

At the beginning of the Bimmers strategy (at the end of 2016), Bim offered a high monetary incentive, of one sol (US$ 0.25) per cellphone top-up—a lure to attract shopkeepers. By 2019, when this visit occurred, that incentive had significantly dropped because it was unsustainable for PDP to maintain it at previous levels. They simply ran out of budget. Now, Bim offers a percentage (4.5% to 6%) of the total value of the top-ups. So previously, if Bimmers performed a hundred recargas, they received a hundred soles (US$ 25). Now, for the same number of top-ups, they receive between four soles and fifty cents and six soles (between US$1 and US$1.5), depending on the mobile network operator. This percentage model mirrors the business model that telecoms use with shopkeepers.

Thus, there is no significant reason for shopkeepers to work exclusively with Bim rather than with the usual telecom distribuidoras. That is why Heroina comments that she has now "divorced" from Bim: because Bim is not offering enough incentives to foster her loyalty, then she can no longer be exclusive. Since Bim is now providing similar incentives to those of telecoms, she, like other

[240] Conversation with señora Heroína, Collique, August 19, 2019.

shopkeepers, regularly switches between interfaces to maximize the benefits of each specific platform and incentive.

For new Bimmers, and to play with Heroina's metaphors, rather than divorcing, they just don't 'marry' anyone. Instead, most shopkeepers keep their options open and do not commit to one provider. This constant switching is not only driven by incentives; shopkeepers also ponder their experiences with each provider, particularly the frequency and impact of system crashes (like the ones she mentioned with top-ups for Claro via Bim), which also affect their business. Also, rather than completely 'divorcing' a provider, it seemed to me that shopkeepers are permanently regulating and adjusting the intensity of their simultaneous relatings with each one. This is the daily action of *recursearse*, a reflexive resource-ing for the purposes of subsistence.

Heroina also mentions that she used to top up Movistar cellphones via Bim until she discovered that the incentives for Movistar had disappeared. She also experienced problems with Claro top-ups via Bim (more often system crashes). Movistar and Claro are the largest telecoms (the telecom 'lords') in Peru, and both were dissatisfied with Bim's top up strategy. PDP had signed some initial agreements (convenios) with the telecoms about this strategy, but these agreements might not have been entirely clear. As a result, telecom companies could not anticipate how much this Bimmer strategy would disrupt their existing arrangements with their top-up third parties or distribuidoras, who were in fact significantly affected as Bim encroached on some of their local markets (see Chapter 4).

The telecoms initially profited from USSD fees, which were charged to PDP every time a Bim user, adviser or Bimmer accessed the USSD interface to perform a transaction. This made the cost very high for PDP. Telecoms first lost that profit when PDP transitioned its 'transactional channel' exclusively to an app. Since late 2017, the new agreement between PDP and each telecom was to provide the service of the app, allowing users to download and use it on the phones connected

to these companies. This is a low-rate, flat monthly payment. As one of the PDP engineers explained to me, "We pay for the convenience of the users not paying to use Bim: they can browse for free up to a certain range of megabytes. When that level is reached, the rate is renegotiated with the telecoms".

However, PDP was still using the telecoms' other channel (SMS) to send message confirmations, such as, in the engineers' terms, 'digital receipts' for transactions or changes in PIN numbers. According to one of the PDP engineers, each telecom wanted its own server for the use of SMS as an 'informational channel' to send and receive messages, with separate accountability and payments. She mentioned that telecoms would refer to this as having their own 'gateway' for SMS services. This required more budget and labor to administer on PDP's side. This arrangement lasted until 2019 when PDP switched this information service to an SMS messaging company (compañía de mensajería). Engineers referred to these changes as 'migrations.'[241]

As technologies change—from basic cellphones to smartphones, and with the 'appification' of everything—and as the deployment of Bim moved forward, so do agreements between parties involved. These migrations were effectively disintermediating telecoms from the business of mobile money. The more banks turned telecoms into 'dumb pipes,' the more telecoms resisted, trying to protect their shrinking digital and field territories (some by not allowing top-ups on Bim, others by having constant system crashes).[242]

[241] Zoom conversation with Rosa La Rosa, former head of the engineers at PDP on 03/11/2021

[242] This digital territorial battle between different types of corporations unfolds differently in other places. For instance, with MPesa, particularly in India (and due to regulations in that country) telecoms become entities more akin to banks, rather than banks disintermediating telecoms.

Señora Heroína also does microloan repayments with Bim

The multifaceted señora Heroína (hero is literally her name) not only does, as she says, top-ups, printing services, document scanning, medicine shots and sell office supplies. She also performs microloan repayment cash-ins for her clients who are borrowers of Financiera Compartamos via Bim.

> "Every fourteen days or so, I move six thousand, five thousand, four thousand soles. Other days are lower because the [microloan] groups pay every two weeks, on the 14th of the month and at the end of the month. So, between the end of the month and the 14th, a good amount of money moves. For example, during a week like this one, on the 6th or 7th day of a month, there are few new women's groups so I move around 1,500 or 2,000 soles. Yesterday, for example, I did about 1,500 soles. A day of 1,000 or 2,000, is one of the lowest days. But I always have clients, I cannot say that there's days in which there's no one asking for transactions; there's always someone: 'Señora: Bim, 200, 300, 150.'"

Bimmers, like Heroína, receive cash of women borrowers of Compartamos and perform cash-in transactions, adding the money to the clients' Bim wallet accounts. This represents yet another type of money (I will expand on this in the following section) and an additional form of experimentation with Bim. For this service, clients of the Bimmers' shops need to have their own Bim wallets. Compartamos has its own microcredit agents who teach the women borrowers how to open and use their Bim wallets. These microcredit agents (who offer loans and collect repayments) circulate around the same neighborhoods that Bim advisers visit almost daily, along with the telecom distributors (distribuidoras), establishing relationships with shopkeepers and neighbors.

Compartamos, one of the more than twenty Modelo Peru partners, has an exclusive subset of Bim advisers (still organized through Tambo, the company that hired them) dedicated to this strategy. This approach not only increases Bim's transaction volume (the engineers' wanted transactionality) but also expands the number of active users beyond VIPs or intermediaries like the

Bimmers. It engages final users of Bim who see a specific purpose in using the mobile money platform.

Compartamos is not a bank but a financiera: it offers financial services like savings, credit, insurance, and payment to low-income groups, previously considered 'unbankable' and thus, not the usual target of large commercial banks.[243] According to its website, Compartamos' goal is 'to bring opportunities that promote their development and that of their communities'.[244] This company considers that they generate 'shared value' though 'social value' by 'offering opportunities for financial inclusion in the shortest time possible and sharing the benefits obtained with the communities where we work.'[245]

Miguel and Samuel, the Bim advisors designated to microcredit with Compartamos in Heroína's district, explained to me how this strategy works. There are groups of mostly women that participate in *círculos de crédito* (credit circles) called "Credito Solidario" (Solidarity Credit). These are groups of women who cannot access individual credit because they do not have assets to use as collateral for it, instead what they get is group credit, for small amounts of money, microloans of less than 50 soles (15 dollars) renewable every other week.

While they mentioned this low amount as the basis of microloans, in our visit to Heroína we saw at least a couple of women coming to do cash-ins for microloan payments, and none of them brought only fifty soles. Rather, they brought three or four hundred soles (between ninety and a hundred twenty US dollars), though one I think was paying theirs and someone else's loan. Still, Heroína mentioned that every day "there's always someone: 'Señora: Bim, 200, 300, 150,'" not just fifty soles.

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244 Propósito, visión y mística (compartamos.com.pe)

245 Propósito, visión y mística (compartamos.com.pe)

Microcredit programs targeting women groups as borrowers have been around for several decades, originating in various places, with multiple epicenters. While some attribute its origins to Muhammad Yunus' Grameen Bank in Bangladesh, anthropological work shows that practices of comparison and borrowing for the purposes of replicating, improving and escalating 'good practices' in the economic development sector are widespread and origins cannot be traced to a single source (Kar and Schuster 2016, among others). In Latin America, particular in Peru, microcredit has its roots in NGO-led experiments from the 1970s and 1980s, initially targeting peasants, and later, from the 1990s into the new century, increasingly focusing on women's groups.[246]

This shift is not surprising; women, once invisible to development practices, later became one of its favored subjects (Escobar 1995). As anthropologist Lamia Karim explains, in the 1970s, gender became a focal point of aid programs worldwide, particularly after the United Nations declared the 1970s the 'Decade for Women' (1975), and microfinance initiatives geared to rural women to capitalize on them (2011:171). As microfinance has become more 'professionalized' over time—meaning it has become similar to traditional banking and subject to similar metrics and accountability systems—it has also expanded from rural areas to include women in low-income urban households (Karim 2011; Kar 2018). The more this field professionalized, the less it is run by NGOs and the more by for-profit financial institutions, like Financiera Compartamos.

Financiera Compartamos lends money to a group of borrowers rather than to individuals, because these borrowers do not have property or accounts to act as collateral for their debts. Instead, the group itself acts as collateral for the debt, substituting physical collateral such as houses or other property, creating what scholars call 'social collateral' (Schuster 2014 and 2015). Former microcredit practitioners from the early experimentation times (eighties and nineties) told me that in Peru, they

[246] Conversations with former microcredit practitioners as part of my fieldwork and writing process.

referred to this mechanism as *Garantía Solidaria* (Solidarity Guarantee). In this way, the group is collectively responsible for the loans of its members and guarantees to cover any non-compliance by a member. In practice, social collateral operates through "peer monitoring," meaning that members surveil and often shame each other to ensure everyone repays their part of the group loan (Karim 2011).

As this mechanism proven to be very effective in early experiments—measured in economic terms by very low default rates—it was expanded, replicated and formalized as a financial development strategy worldwide.[247] However, for Karim, who examined microfinance in Bangladesh in terms of its social effects on the communities where it was deployed, there is more to consider than just numbers. She argues that microfinance generated a regime of NGO governmentality expressed in "the policing of women by women" (2011:74). Women become the enforcers for NGO's—and later, the financial institutions—acting as their eyes and ears, like "financial police." These micropractices of surveillance and toxic empowerment further deteriorate community ties (Ibid). In other words, it worsens situations rather than improving them, bringing more stress rather than relief to women's lives (81).

Every fourteen days, a Compartamos employee meets with the circle of women, collects the money, and authorizes a new biweekly credit. Each credit circle has a treasurer and a group leader. Before working with Bim and mobile money, the treasurer and the leader manually collected the money at the fortnightly meetings. They had to handwrite the serial number of each bill in their accounting book, and check, one by one, that the bills brought by women borrowers were not counterfeit. This process was time-consuming. The Compartamos collector would then have to verify all the cash again and take it to the Compartamos offices or to banks for deposit. Interestingly, when

[247] Revision final: traer cosas de mi capitulo que era quals en el que hablo de la profesionalización del microcredit y como se acerca a la banca as usual.

this collector role was explained both by engineers and managers at PDP and even by the Bim advisers themselves, a key part of the narrative was that for collectors, it was a time-consuming, high-risk job, prone to robbery and the violence that often accompanies it.

With Bim working in alliance with Compartamos to collect the loan payments, the process has changed. Bim advisers are now the ones who carry the burden of handling large sums of cash. The women of these circles, in preparation to their biweekly meetings, go to a small shop where they know there is a Bimmer, like señora Heroína, who collects money for Compartamos and they upload their biweekly fee in digital instead of cash into their own Bim wallets with the help of the shopkeeper. In other words, the women cash-in the amounts they owe to Compartamos to their wallets, a transaction facilitated with the intermediation of the shopkeeper serving as a stationary HTM, previously prefunded by the mobile HTM or Bim adviser.

Instead of the Compartamos repayment collector, it is both the Bimmer and the Bim adviser who must now check each bill to ensure it is not counterfeit. The Bimmers, like Heroína, serve as temporary custodians of large amounts of cash, which the Bim adviser later collects (on their prefund rounds) and transports—like an unarmored truck—to the nearest bank agent… a time-consuming, high-risk job, prone to robbery and the violence that often accompanies it.

Through Bim, thus, Compartamos has not only successfully established a digital platform for collecting payments, simplifying its internal processes and reducing costs, but it has also outsourced an essential infrastructural component of their business: the human and physical handling of money in cash form. This responsibility has been shifted to ‘collaborators’ they don’t directly employ (Bim advisers) and to others who perform the work for less than a monthly salary and rely solely on incentives (Bimmers). I consider this another example of what I call corporate recurseo. Compartamos is achieving a task that is central to its core business as a financiera (specialized in microloans) through irregular means—not by using company employees or their fieldworkers, but by

leveraging other networks of humans in labor regimes that exist in the margins of formality and legality. This is one of those convenient loops that allow the business to 'cleverly' bypass rules and formalities, enabling it to remain competitive in a market already saturated by other financial entities.

When the women go to their microloans' meetings later, they already have their repayment share of the group loan in their mobile wallets. At the meeting, instead of giving cash to the treasurer, they transfer from Bim to Bim (P2P): they send the money from their mobile wallet to the mobile wallet of the treasurer. The treasurer, once she has collected all the money from her women's circle, sends it from her Bim wallet to that of the Compartamos' collector, who verifies and confirms its reception.

Every Bim wallet in these women microcredit circles is filled and emptied following the fourteen-day microcredit cycle. Women borrowers do not keep digital money regularly in their Bim wallets. They live by the day, with no surplus money in their cash economies. Contrary to the official discourse of microfinance as a source for fostering women's entrepreneurship, most ethnographic work shows that women in any region subject to these programs and rhetoric uses the money to cover their daily family needs (Karim 2011; Kar 2018). Loans reflect needs such as school, food, clothing and not investment opportunities (Sneath 2012: 468). They use Bim just for the moment they have to pay the microloans received, thus, they bring the exact amount they need to pay in cash to the shopkeeper to convert it into digital money.

Still Tambo and PDP managers consider this strategy one of the successes of Bim because it feeds the system and circulates big amounts of money through Bim's pipelines. This circulation certainly keeps their monthly statistics up so PDP can get more support from the banks' partners. But it does it in an unexpected way: not only Bim advisers and Bimmers are the necessary human pieces

needed to complete the digital infrastructure,[248] but also, an important portion of the money that circulates in Bim pipelines goes in and out of the system each day, it doesn't stay in the system, and it requires its humans (Bimmers and Bim advisers) to permanently feed the circulation.

Señora Heroína explains that 'padecemos sin talonarios' (we suffer without receipt books)

As with every conversation with shopkeepers during fieldwork, our conversation with Heroína, was punctuated by interruptions and pauses as she interacted with her clients. She performed cash-ins for a couple of women, borrowers from Compartamos credit groups, who came to upload to their own Bim wallets their part of the group loan biweekly repayment. After these money exchanges, and at her clients' request, Heroína handwrites a physical receipt for each client in a receipt book or *talonario*, which serves as proof of the digital transaction (Figure 5.6). The receipt includes the number of transaction (as shown in the SMS digital receipt that both the client and Heroína received on their phones), the amount, date, time, and phone number.

[248] On humans as critical infrastructure, see Simone, AbdouMaliq, 2004.



Figure 5.6. Señora Heroina performs a microloan repayment cash-in for a women borrower from Compartamos. In the image we see the women with many hundreds of soles in cash in one hand and Heroína writing down a physical receipt for the transaction in a Bim formal-looking talonario. Comas, August 2019. Photo by the author.

Dylan mentioned that at Tambo (his small business running the Bim advisers' strategy for PDP), they had to create these receipt books for the growing group of shopkeepers working as Bimmers for Compartamos. Each receipt has Bim's logo and a serial number. This voucher serial number replaces the bills' serial numbers in the women credit groups' accountability. This paper receipt seems necessary for the digital pipelines to be trusted. As explained in other chapters, cash is still king in the country, particularly in the cash economies of the peripheries and their bodegas' universe. When digitized, especially in relatively large amounts such as loans compared to other transactions like top-ups, it seems to require the backup of a paper to compensate for its lack of visible materiality—a paper that can be trusted (Figure 5.7).



Figure 5.7. Señora Rosemary shows me a page of her talonario Bim, filled with information of the latest microloan repayment cash-in. Comas, August 2019. Photos by the author.

In Peru, there is a saying, "papelito manda" which literally means "a piece of paper rules." This saying conveys the power of the written word in the Peruvian imaginary, as previously explained. A *papelito* (a little piece of paper) serves as an enforcer of authority—sometimes rejected by shopkeepers (like contracts with banks), and sometimes needed (like physical receipts for their customers). Shopkeepers reject a papelito when they fear or suspect that it will be used to control them; they need it when it wields protection for themselves and their customers—as additional proof that the digital transaction occurred. Shopkeepers also keep accounting books where they record each mobile money transaction. These are their own written records to compare with the balance they see on their phone screens. If there is a discrepancy between both, they use these handwritten records and notebooks to discuss them with advisers (Figure 5.8).





Figure 5.8. A shopkeeper who runs a locutorio (a business with private phone booths for making calls), discusses discrepancies between his written records of top-up transactions with Bim and what his mobile wallet shows in his phone with Bim advisers. Comas, August 2019. Photos by the author.

Dylan mentioned that the *talonarios* were created at Tambo at the insistence of Bim advisers and Bimmers. I also recall Bim advisers mentioning these to the engineers, in their weekly meetings at PDP, who insisted that Bim clients could access this information on their phones in two ways: as a 'digital receipt' or confirmation of the transaction sent via SMS, and as a record listed in their Bim wallet app's transaction history–. Despite this, it was still common practice to request a physical voucher to substantiate the digital exchange of money.

When I inquired further about these *talonarios*, it was unclear whether the funds came from PDP. The PDP engineers were aware of the practice but neither validated nor rejected it; they seemed to prefer not to be directly involved. Yet, it seems likely that the recurring investment of printing talonarios was made by Tambo, the third party responsible for implementing the Bim adviser strategy in the field. This suggests that while the money may have been allocated from PDP to Tambo as part

of their budget arrangements, it is unlikely that there was a specific amount itemized for talonarios. Rather, it appears to be a discretionary expense by Tambo, deemed necessary for their operations in the field—a flexible and creative way to manage the budget to create some surplus to use for this purpose. In short, a sign of clever resourcefulness or recurseo.

When her clients leave, Heroína resumes the conversation by requesting a more organized way to systematically receive these talonarios, which she refers as *materiales de trabajo* or working materials. I ask her if a talonario lasts a month and she replies, almost offended, that there's no way it lasts a month! In what follows, the conversation I reproduce here shows how Heroína (the Bimmer) and the Bim advisers, are all utilizing this discussion—prompted by my presence in the field—to request working materials from Dylan, who supervises the whole strategy of Bim advisers in the field.

Heroína (Bimmer) mentions "We need working materials too, please. Even just the receipt books. All of us Bimmers suffer [padecemos] because of the lack of receipt books." And Melissa, a Bim adviser, emphasizes, "That's what we suffer from. She suffers too [Eso padecemos. Ella también padece]." *Padecer* is a verb often used to talk about disease or illness, and it is interesting to me how they used it to talk about the lack of receipts, as it highlights the central role that these have particularly with digital transactions of higher amounts than phone top-ups, like the microloan repayments or tax payments.

Heroína goes on: "I don't know if you order a receipt book, whether you make ten or a thousand. But you have several advisers who come and say, 'Señora, I've brought your receipt book.'" Dylan reasserts that they give each Bimmer a receipt book. But Heroína and the Bim advisers present in the shop that day insist on their request, as it seems that talonarios are a scarce commodity, and they can't rely on the steadiness of their supply chain. Melissa (Bim adviser) recalls that "during Samuel's time"—a former Bim adviser who also acted as a field supervisor —"he would give me a

receipt book to deliver to every Bimmer in Comas." Heroína interjects to comment that, in contrast, now Miguel, another Bim adviser, "often comes running to my store and says, ' Señora Heroína, please, could you give me four or five receipt books? There's another lady [from a different shop] who needs some,' and I can't believe it. How is this possible? You need to bring us materials! How can you work like this?"

Señora Heroína sells office supplies, along with providing phone top-ups, microloan repayments, inyectables, photocopy and scanning services. The situation she is narrating is that lately, Bim advisers are coming to her store to buy receipt books rather than bringing her more Bim talonarios as part of the support she expects to receive as a Bimmer. The talonarios she sells are simpler, standard versions (not like the ones printed by Tambo with Bim's logo). In the absence of exclusive receipt books printed by Tambo, Bim advisers purchase standard ones in corner shops during their visits to Bimmers who like señora Heroína, run office supply shops, so they have some to deliver to Bimmers if they request them. This constitutes a further workaround, another example of in-the-moment creative resourcefulness deployed to make Bim work for everyone.

In this example we see multiple instances of recurseo. Tambo, Dylan' business, provides receipt books to the Bim advisers for distribution to the Bimmers, requiring creativity and stretching of funds on their end. These receipt books look more formal than the standard ones sold in corner shops, though they aren't formalized in the sense of approved and owned by PDP but rather they are product of Tambo's recurseo. Since they rely on recurseo rather than on an organized and abundant flow of resources (including capital), their supply, in practice, is somewhat irregular and unpredictable, adjusted by demand and the possibilities of budget tinkering. In the Bimmers and Bim advisers' experience, these more *formal-looking* receipts ran out too quickly. While Tambo manages to reprint more, the Bim advisers also resort to their own recurseo (as verb, *se recursean*) by purchasing standard ones. They all find ways to keep the wheel moving. In their doing, the identity

of Bim is also shaped by these tinkerings and irregular flows—a technology that relies more on the recurseo of all the parties involved than on capital and steady institutional support.

Nevertheless, señora Heroína is not happy with this situation: "I ask you to please get your act together [pónganse las pilas]. Honestly, how can you function this way? Look, keep in mind that I deal with Bim every day, Bim, Bim, Bim. We need receipt books and promotional materials like the bolitas [little balls, she refers to the ceiling danglers that advertise Bim]." Dylan responds, keeping his cool, that the situation has improved now with regards to talonarios, that they have receipt books in the office that advisers are bringing to the Bimmers. The advertising issue (signs both for top-ups and microloan repayments) he mentions to her, "is a bit more complicated" [estamos con problemas] and "it is not yet defined," but just in case

> **Dylan:** We'll leave you my number so you can call us if you need anything.
>
> **Heroina:** Ok. I'm very demanding [exigente]. I'm sorry.
>
> **Dylan**: And that is a good thing.
>
> **Heroína:** I don't like excuses. If you don't have the talonarios, just tell me "I don't have them." Don't tell me "tomorrow" because I am never going to believe you again. I'm being honest.
>
> **Dylan**: Tomorrow never comes
>
> **Heroína**: I'm very strict [recta] with my children.
>
> **Dylan**: As you should be, right?
>
> **Heroína**: I think you have to plant the tree well if you want it to bear fruit tomorrow.

In writing, the tone gets lost, but this entire conversation--occurring in the context of Heroína declaring that she has now 'divorced' Bim—is done half-seriously, half-jokingly, with care and understanding on both sides: from the merchant and the Bim advisers' team. There is a palpable familiarity among them, the community that the advisers have succeeded in creating—though always the result of their ongoing efforts in mobilizing money and these other materials (talonarios and

physical ads). In the background, throughout the conversation, the store's TV is playing a Mexican soap opera, along with local ads. The sounds of street vendors and the bell of the garbage collection truck also populate the scene.

Tambo has a very low budget for its Bim advisers' strategy; and PDP has limited funds to promote Bim with physical merchandising, aside from their human deployment strategies (Bim advisers) and some highly prioritized working materials such as physical receipts. The largest bank partners, with the most capital invested in Bim, seem reluctant to invest in advertising, especially by 2019, when their focus and resources are increasingly directed to their own mobile wallet apps. As engineers often mentioned to me, what they invest in Bim is mere pennies compared to the significant capital and human resources mobilized for their wallets, particularly BCP to Yape.[249] In stark contrast, during my visits, I observed Bim advisers tinkering with existing Bim posters in the stores they visited, manually cutting and pasting information to keep them up to date (Figure 5.9). That day of our visit to Heroína, they even suggested to their supervisor that, with some fishing thread and tape, they could transform the existing posters into ceiling danglers, hoping that Dylan would give them the go and the minimal budget needed to purchase those materials to recycle the ads.

[249] Rosa: "Credicorp le ha metido hartisima publicidad, le ha metido dinero a pasto a Yape." Zoom conversation, 03/11/2021.





Figure 5.9. Bim advisers and their supervisor tinker with an outdated poster about top-up via Bim in the locutorio shown in the previous picture. Using tape and cutting out some information, they update the poster. The second image is a detail of the view of the street and hills from the locutorio. Comas border with Collique, August 2019. Photos by the author.

DEBT working money

While that day we visited many other shopkeepers, no one was as generous as Heroína in sharing her opinions and showing me her money practices with Bim. Of course, the fact that Dylan was there mattered too, as she perceived him as a higher-ranking representative of the mobile money system—someone who could answer her questions and to whom she could give suggestions and complaints. However, from a broader perspective that includes bankers and engineers, he was not central enough to have the leverage needed to generate the changes she expected.

She mentions that she started handling microloan payments because she knows many Compartamos advisers (the microloan collectors who oversee the women's groups). She explains, "sometimes they've come here to pay with Bim and they have shown me how. So, they already know me." Compartamos initially used Bim as a tool for their microloan collectors, who with pockets full of cash would then go, like the Bim advisers, either to BCP agents or to Bimmers to deposit (cash-in) the money collected from the women borrowers. Now, they have delegated most of that task of digitizing the microloan repayments directly to Bimmers and the women borrowers. Bodegas act as if they were banks of sorts, temporary custodians of all this cash, without the legal or physical protections of banks.

As she gestures with her hand, pointing in various directions, Heroína mentions that she serves many borrowers' groups, "I think I'm the only Bimmer in this lower part of the area. I have several groups—groups from La Alborada, from up here in Collique, from around here, and around there." The multifaceted Heroína tells us that she works

> "with my WhatsApp, and I work with my two cellphones, my personal one and the store one, which is the phone that I use for top-ups. The thing is, there's no advertising. People come and ask, 'What is Bim?' Some don't know how to use it, right? And I explain it to them, and they say, 'Oh well, señora, I'm in the [microloan] group. Can I pay here?' And I tell them, 'Yes, I'll give you my number, call me, and I'll save a balance for you.' And that's how I work. It's a way to keep customers."

Both of her cellphones are smartphones, allowing people to text her through WhatsApp or call her to reserve some of her available funds for their microloan repayment cash-ins. This way, they can come to the store later in the day with the peace of mind that the funds needed for their transactions will be available.

Besides the lack of ads and the scarcity and irregularity of the delivery of talonarios, another thing that stresses señora Heroína is that after five p.m., she cannot do more cash-ins for

Compartamos. "They close it, they tell me ‘No, not until tomorrow,’" and she doesn’t understand why the system doesn’t allow her to do more transactions of that type. She wonders, “Well, the bank may have its personal reasons to do so, I don’t know.”

Dylan explains that the wallet system cuts off at a certain time for Compartamos and microcredits. “You can imagine, our guys [*los chicos*, a way of referring to the Bim advisers] have to balance the books [*cuadrar caja*], they need to take the money to a BCP agent, and the later it gets, it becomes a bit complicated for them to collect it.” When it gets dark, it becomes less safe for Bim advisers to walk in those neighborhoods with pockets full of cash. This system somewhat protects the Bim advisers while facilitating daily settlement for Financiera Compartamos.

From Heroína’s perspective though, this represents a problem because her business serves a city that rarely operates on an 8-to-5 p.m. economy. Heroína mentions that many señoras who ran small shops and serve as Bimmers or *bodegueras*, including herself, have collectively asked Bim’s central office to intervene to see if Compartamos could provide a minimum balance of one thousand soles that they can administer until the next day instead of closing at five.

> “We’ve also directly asked Compartamos. Well, as I always say, they listen to us, but they also consider their convenience. We don’t know how they operate. We also can’t criticize what we don’t understand, right? It was us women who went to ask for a minimum amount to be provided so we could have it on hand to work with customers who come late, after 5 p.m. In my case, I often keep 500 soles as balance on my phone. Sometimes people come asking for transactions of larger amounts, and I can’t cover that. Why? Because I also do top-ups, and I keep a separated balance for those.”

Heroína personalizes and distinguishes two types of money that she manages through Bim: top-up money and microloan repayment money. While the fund is kept all together in a single mobile wallet, she is effectively earmarking this impersonal digital money into these two personalized types (Zelizer 2017; Hart 2007). Within her wallet, she keeps balances for both purposes and assigned

clientele. Not only that, but she is also suggesting how to improve one of the types (microloan repayment), which she clearly considers different from top-ups. It has a different purpose (to pay a debt) and operates on a different scale (while the average top-up amount is five soles, the average microloan repayment is two hundred soles). Microloan money carries a different affect and emotional weight as well. She emphasizes how a group of women bodegueras organized to request for funds directly from PDP and Compartamos to better serve the stressed women borrowers—under family and group pressure—who come to pay their loans, sometimes late, as no one is back home by five. Some of the women borrowers, I speculate, are bodegueras themselves.

As she explains, while the strategy of Bim advisers going around funding Bimmers works, shopkeepers—las señoras—need to have cash on hand to provide in return for the funds they request. She mentions that her daily working capital is five hundred soles, which would run out with just two or three microloan repayments, and a portion of it must also be reserved for top-ups. Under the current organization of Bimmers funding, if she wants to handle more transactions and earn more commissions, she will need to have more cash available to give to the Bim advisers in return for larger requested funds. She understands that there is a demand for this service and that she needs more capital to be able to work it [*trabajarlo*] for her benefit and profit. Money itself is, thus, a working material here. “But I don’t have such a strong capital to do that either.” Instead, she suggests it would be ideal if Compartamos could upload a balance to the shopkeepers’ Bim wallets, “not too high, but not too little either, because I have quite a few people who come to pay their microcredit installments with Compartamos via Bim.”

To better serve the women borrowers, the type of money arrangement Heroína is proposing is for Compartamos to provide centrally administered funds to the shopkeepers, allowing them to operate after hours and without needing to give cash in return. This type of money is similar to the

prefunded money managed by Bim advisers (the eight hundred soles centrally administered by Tambo, uploaded to their Bim wallets every morning, and returned to Tambo every day by five pm).

The money she proposes, which I refer to as 'debt money,' would be working money that does not belong to the merchants; it is money credited to their Bim accounts for them to use—to work with it. The collective of women bodegueras that Heroína describes has envisioned a very clever arrangement—drawing from their daily interactions with all sorts of advisers (from banks, telecoms, Bim, and others) who circulate through their shops. They can work that debt money to earn more commissions while streamlining money flows for Compartamos, creating a potential of being a win-win situation.

Though, at that point in time, neither PDP nor Compartamos accepted this proposal, perhaps because the collateral was unclear to them. After all, from their perspective, these bodegueras were not formally their financial institution clients nor their employees. They were not even considered as formal third parties, like Compartamos fieldworkers and debt collectors, or Bim advisers. Yet, from the señoras' perspective, they were not just Bim clients but, using the engineers' metaphor, they were MVPs (Most Valuable Professionals) or VIP members, already providing services for Bim and Compartamos. They were the chosen ones and that, it seems, was collateral enough—an already established relationship of trust, built up every week, in every interaction with advisers, and reinforced with every "Bim, Bim, Bim." While this relationship might have been seen as irregular or unstable—or purposedly kept in more informal terms—, the bodegueras viewed it as regular, stable and capable of improving under better conditions.

No one marries no one in digital financial lands

Señora Heroína also mentioned that, while now she mobilizes around six thousand soles every fourteen days as a Bimmer for microloan repayments, “before I used to manage up to ten thousand. But now that the BCP’s bank agents are increasing, they’ve taken some of our clients.” BCP is the largest bank in the country, with the most extensive network of bank agents, and they have recently acquired the capability to handle repayment collections for Financiera Compartamos. This means that BCP’s engineers, who sometimes are slow to complete system integrations for Bim (see Chapter 4), have successfully completed the technological integration of this new functionality into the shopkeepers’ POS systems and are now also collecting microloans for Compartamos.

As I learned during my fieldwork, technological integrations result from agreements or experiments previously negotiated between the parties involved. This implies that while Financiera Compartamos is deploying this Bimmer strategy in some areas, it is also exploring other options, such as negotiating with BCP this digital collection channel. For BCP, the benefits of this integration extend beyond the fees agreed upon with Compartamos to provide this service; they also include the potential for mining the data generated through these repayment collections now circulating through BCP’s pipelines. In this sense, to use a metaphor of one of the engineers I often accompanied, Compartamos is ‘feeding the monster’ that could eventually eat it up (see Chapter 4).

Dylan replies to Heroína’s observation on the effect of BCP’s agents now also collecting repayments by acknowledging first that “there’s been a lot of expansion” for Compartamos. With his characteristic optimism, he explains that “more initiatives are being done with Bim advisers with the Compartamos groups to encourage more payments via Bim. For example, before, there were only a few groups that paid with Bim. Now, it’s expanding, and everyone will benefit. All the groups will have to pay with Bim, no exceptions.”

Margarita, the leading engineer at PDP, confirmed to me the expansion that Dylan commented. By 2019, Compartamos acquired additional stock in Bim, increasing its holdings to 56% of the shares, thereby becoming its principal partner and overtaking BCP, which had previously held the largest share. By May 2022, this financial institution further increased the capital invested in PDP, bringing its ownership to 79.5% of the shares.[250] As the company stated in relation to this second capital increase in PDP and Bim, through this transaction, Compartamos:

> "is initiating a phase of expanding the concept of electronic wallets among its existing clients and those it can attract through the Mobile Wallet (BIM), under a structure designed to meet the demand from an unbanked population that requires a formal electronic payment system."[251]

We see here that the more a financial institution concentrates control over a money technology, the more willing it becomes to invest in it and to expand its reach. The ideal of the partnership among competitors, which was PDP's initial form, is replaced by the concentration of capital and control. The more they invest, the more they become invested in the technology.[252] Though when BCP was PDP's main investor, their investment served quite the opposite purpose: to move slowly, not to grow Bim significantly. BCP was invested in Bim as a lab, as a site of experimentation, their investment was centered in producing knowledge to feed its other endeavors such as their mobile money app Yape, in which this bank was the sole proprietor (see Chapter 2).

These differentiated investments and ways of being invested in Bim, reminded me of a distinction made by Margarita, the head of engineers, which I discussed earlier—between telecom infrastructures used as information channels (such as SMS for transporting digital receipts) and those

[250] Compartamos Financiera S.A., "Notas A Los Estados Financieros al 30 de junio de 2022 y 31 de diciembre de 2021."
[251] Compartamos Financiera S.A., "Notas A Los Estados Financieros al 30 de junio de 2022 y 31 de diciembre de 2021."
[252] See D'Avella 2019: "investment speaks to both investing and being invested" (38)

used as transactional channels (USSD for basic phones and mobile wallet apps for smartphones). Using this language, it seems that for BCP, when this bank was PDP's main investor, Bim was primarily an informational channel—a platform to experiment with and apply lessons learned elsewhere (like with their mobile money app Yape). For Compartamos, however, PDP and Bim are providing a transactional channel to directly collect loan repayments without needing to rely on BCP's agents infrastructure. Because Compartamos uses Bim as a transactional channel rather than just an informational one, it is invested in continuing to concentrate PDP's shares, thereby limiting the information (on amounts mobilized, frequency, areas, etc.) shared with other partners... especially with BCP (the biggest financial 'monster').

I have highlighted the hierarchies within Bim's labor structure, where the more precarious the labor regime, the closer the workers are to the peripheries they are expected to serve and the farther they are from each bank's formal business structure (e.g., as collaborators and third parties, and as field workers of these third parties). We also observe hierarchies among investors in PDP, where partners have never been equal and their positions shift according to their priorities, manifested in their investing or un-investing in Bim.

Furthermore, as I have mentioned elsewhere, I repeatedly learned during fieldwork that when you follow money in Peru every road leads to BCP in one way or another.[253] For instance, within PDP's partnership, BCP and Financiera Compartamos are partners, albeit with shifting levels of power and leverage. Initially, BCP held most of PDP's shares and had greater access to the information Bim produced; now, Compartamos holds the vast majority of shares—significantly more than BCP ever had, as this entity is differently invested in Bim—making that access more opaque to BCP.

[253] See Chapter 3.

On another layer, these two entities engage in a different relationship: BCP act as provider for Financiera Compartamos' loan repayment collection through BCP's bank agents as a transactional channel—a type of relating that allows BCP to mine the information that Compartamos generates. It may be the case that Compartamos is focusing resources on Bim as its main digital channel. But it may not be the case that Compartamos is deciding to 'marry' Bim (i.e., to completely and exclusively tie themselves to one digital channel for microloan repayments). Rather, it seems that it is also keeping its options open, such as to have all possible collection channels available for their low-income borrowers, such as those with BCP's bank agents, who also serve the same constituencies.

BCP and Compartamos may relate in other capacities as well, beyond the scope of my research. What is clear to me is that in the business of money and lending, they frequently encounter each other, and the nature of their relationship varies depending on the situation. Moreover, this evidence suggests that there are no lasting alliances in the digital financial landscape; no one marries no one: no one can be sure of the other's loyalty or take their explicit motives at face value. Instead, these entities appear to be constantly exploring ways to combine or separate their resources based on what will most effectively maximize their profits and keep their trade secrets hidden from each other's view. Of course, these are private institutions, oriented to profit. However, as one of PDP's engineers—Margarita, a seasoned engineer with years of experience working for banks—commented to me regarding particularly the largest banks:

> "Banks are extremely selfish, compared to other industries, from what I know. They learned a bit from Bim and then immediately decided to create their own independent mobile wallets, each wanting theirs to be the country's go-to wallet. They entered into competition when they could have used the platform they all invested in together,

which was supposed to be a single highway where each could build their brand. But, well, that's just how banks are."[254]

Every large bank wants to be the one to develop the mobile money technology that becomes the 'country's go-to wallet.' Collaborations seem to function as learning spaces but not for transactional purposes. For the latter, BCP has Yape, Interbank has Tunki, and some have collectively created another app called Plin. But this other entity, Compartamos, a newcomer which is by legal definition a financial institution and not a bank in Peru (though it is a bank in Mexico, where it originated), uses Bim for transactional purposes, so it needs to gradually push everyone out, including the engineers, who eventually left PDP one by one.

Finally, the 'financial inclusion' rhetoric remains consistent: Bim was first presented as a mobile payment system for the 'full time fighters,' while Yape (BCP) frames each new milestone in terms of users or transactions as a contribution to financially include the underserved in need of electronic payments.[255] Now, Compartamos claims they will use Bim for serving unbanked populations assumed to need a formal system to incorporate their cash economies into mainstream finances. While Compartamos uses Bim to more effectively reach those not yet indebted through formal banking, the power of this development discourse lies in its adaptability—it is all encompassing and can be tailored to any of these technologies.

[254] Zoom conversation with Rosa La Rosa, former head of the engineers at PDP on 03/11/2021
[255] Citar Gestion 17 de marzo 2022. De que manera Yape ha aportado a la inclusión financiera?

CLOSING A tech that lacks capital but abounds in recurseo

Throughout the chapter I have shown how, in practice, Bim's operation relies on the creativity that its engineers, Bim advisers and Bimmers deploy daily, expressed, for instance, in the different types of monies and other working materials they circulate to lubricate its pipelines. This is what I have proposed to see as *recurseo*. I have examined multiple examples of how this recurseo appears in the practices of everyone involved. It is also evident in the labor shortcuts that banks experiment with and in the outsourcing of the risks of handling money in cash form to networks of bank agents, fieldworkers of banks, telecoms, financieras like Compartamos, and the Bim advisers and Bimmers themselves. In their quest to find efficient ways to navigate the peripheries and bank previously unbanked money, these financial entities engage in what I refer as *corporate recurseo*.

Engineers envisioned both the figures of Bim advisers and of Bimmers as a human-with-cellphone infrastructures carrying special monies not only for a specific (yet still an abstract) geographic location –the places where 'unbanked' reside—but also as figures with a temporary horizon. In the long run, they were intended to be superseded once the not-so-unbanked and not-so-un-digital transitioned to using the Bim wallet in their daily financial practices. After all, Bimmers handled transactions for users, like phone top-ups, tax payments and microloans, which any Bim user could do if they already had and kept digital money uploaded to their wallets. That is, Bim proponents and experts expected that eventually, Bim would become an 'environment' for its users, rather than just a system where money enters only to be immediately sent elsewhere (such as for phone top-ups, microloan repayments, and tax payments), thus leaving Bim almost as soon as it enters.

However, this long-term vision—and this sort of 'planned obsolescence' to be replaced by a 'frictionless' transportation and delivery of digital money—remained a central design imagination

which may or may not unfold as anticipated. In practice, the possibility of shopkeepers earning commission money through transactions via Bim relied heavily on their receiving funding from the prefund money managed by Bim advisers, who visited them almost every other day to perform that task. The whole mobile money system would not have functioned without the consistent and systematic presence of Bim advisers facilitating the exchange of cash and digital funds, and the transportation of cash to the banks' last-mile infrastructure (bank agents) for the Bimmers. Without these advisers, the system would not only have broken down but would have failed to initiate in the first place.

If Bim advisers disappeared, then shopkeepers themselves would have needed to allocate time every other day to go and carry out this funding step themselves by approaching the nearest bank or shop (bigger than theirs but still local) where a merchant would act as correspondent agent for a bank and exchange cash for digital tokens to supply their Bim wallets. This was the initial design and assumption built-in on Bim—and it failed to take off, then came the Bim advisers. We have to keep in mind that these are local corner shops, often no larger than a small room in a house facing the street, typically managed by a single family member—often a woman, often head of household—who has no other source of income, and who is primarily dedicated to tending to the household and family needs. Taking the step to close their shops would not only mean a potential loss of business opportunities and the risk to be robbed by transporting large sums of cash but, in many cases, also leaving small children or elderly relatives unattended.[256]

But also, shopkeepers are used to this dynamic: providers (in the form of 'advisers,' 'distribuidoras,' 'promoters,' 'debt collectors') come to them. Shopkeepers do not frequently visit the offices of the corporations with which they routinely relate with, whether these corporations supply

[256] On Chapter 4 I contrast how a technology is imagined and how it needs to be deployed, as a common issue in STS literature. While models, with their neat diagrams and industry reports, often portray frictionless technologies as solutions to infrastructural problems, the reality of their deployment reveals a different story.

products (such as beers and sodas) or, lately, tech offerings (POS, phones, mobile wallets) and digital funding for various purposes. I have situated the Bim advisers, the monies and other working materials they mobilize in the already densely (inter)mediated peripheral environments where they are deployed. In these environments, the shopkeepers who are to become Bimmers, and even those already enrolled, have long been engaged in various digital financial practices on behalf of banks and telecoms. They have been supported by other third parties of telecoms and banks already, who also go around supplying digital funds, mobilizing monetary incentives, and providing technical support, just as the Bim advisers. In sum, all sorts of advisers who circulate around small shops, performing transactions, handling cash, and providing customer support on behalf of corporations, are an integral part of the bodegas' monetary ecosystems.

This exploration into layers of digital financial practices, borrowings, and competition to get a hold of the 'unbanked' economies also led me to analyze through the chapter how 'formal' and 'informal' (along with digital and un-digital, banked and unbanked) practices are co-constituted. Their relatings are more heterogenous and dynamic than what traditional dualisms—mobilized in the 'financial inclusion' rhetoric—account for. As I have been pointing out throughout these pages, there are many instances where labor informality or other informal shortcuts seem to be the established way of doing business—implicitly accepted but not openly advertised (as part of the architecture of the mobile money system).

Take for instance, the formal-looking physical receipts that Bimmers request and Bim advisers provide. These are not necessary for the digital to function (which has its own mechanisms for providing digital receipts) nor are they fully validated by PDP or the bank partners, yet they persist. Or consider the simplified contracts—a simple A4 piece of paper or *papelito* without even a company header—designed to be as unofficial-looking as possible to make it easier for the *bodegueros* to sign. All these objects, which banks and their third parties such as PDP and Tambo

and the Bim advisers themselves (drawing from other entities like telecom distribuidoras and previous bank experiments such as bank agents) rely upon, seem to serve as efficient responses—clever solutions and 'simplifications'—to certain market conditions and businesses purposes (or corporate recurseo).[257]

I have also examined what seems a chain of informality that moves geographically from Lima's corporate financial centers to its peripheries: PDP hires Tambo which hires Bim advisers as collaborators (temporary workers) and not as employees; banks and telecoms enroll shopkeepers as agents to act on their behalf in places that are like foreign countries to them (low income, high risk urban areas, and rural areas) through monetary incentives instead of formal written contracts; Bim advisers enroll shopkeepers as Bimmers hiding the fact that Bim is banks, paradoxically, to gain their trust necessary to make the system work and bring money to it. Thus, this project enacts many informalities (by their own standards) or engages in various recurseo practices, which are constitutive pieces of the formalization/inclusion processes that these corporate entities are invested in. These pragmatic informalities (shortcuts deployed in the name of efficiency) and labor hierarchies are enacted upon certain bodies and geographies that cut across pervasive race/class divisions in Peruvian society and which seep into Bim's pipelines.

Furthermore, if the focus is on Bim as an attempt to formalize the economies of 'the poor,' and formalization is seen as a process of making knowledge (or people) legible to those who can interpret these languages (i.e., experts, the state, bankers), my account also reveals the extent to which, in practice, 'formalization' ultimately becomes synonymous with, and narrowed down to, banking (*bancarización*).

[257] For the future: Finn's comments on epistemologies and ways of knowing, epistemological problems of different knowledges colliding and how all these practices are aimed at creating transactional communities but also they are knowledge-making practices.

Formalization in this context is less concerned with improving labor conditions and economic subsistence arrangements, which the proponents of financial inclusion not only keep out of the picture but perpetuate through their own informal arrangements as observed in the differentiated ranks of their work force and the strategies they employ to bank previously unbanked money. People—whether Bim advisers, shopkeepers, or their clients—need to be *formal enough*, meaning banked, and therefore legible to banks, in an individual relationship with them, directly connected through a digital channel such as Bim. These conditions not only facilitate current data mining and money extraction but also pave the way for future extractive practices such as lending and the permanent cycle of indebtedness. Compartamos initiated this via Bim as early as 2019, and Yape (the mobile wallet of BCP) has subsequently followed suit by offering microloans as well through their mobile money app.

I want to be clear that I am not adopting as my own the categories of formal and informal used by the experts I followed and the international development discourse they were in conversation with (which are also discussed in the introduction and chapters two and three). My attempt has been to show how they engage with these parameters in flexible and convenient ways to justify their financialization practices.

For anthropologist of money Keith Hart (2000), 'informal' is a qualitative distinction relative to the forms of publicly organized economic life, "a matter of degrees of social organization", and more so, it depends on what is considered at a particular moment as lacking regular form from the perspective of those who make the standards of what counts as formal. The 'formal' economy' in Hart's words is "the epitome of whatever passes for regularity in our contemporary understanding", for instance, "the institutions of modern nation states, the more corporate levels of capitalist organization and the intellectual procedures devised by economists to represent and manipulate the world" (Hart 2000).

By contrast, and still for Hart, "the 'informal' economy is anything which is not entailed directly in these definitions of reality". Whatever experts cannot understand or control through the 'formal' economic mechanisms is considered 'informal' "– that is, irregular, unpredictable, unstable, even invisible". For the people whose activities are classified this way though, such as the shopkeepers I visited, their activities do have form and a day-to-day repetition which supports their life "but these forms are usually less powerful and less rigid than those underwritten by state law and immense wealth". For instance, when I asked señora Heroína if she felt that the incentives were still good and allowing her to still make profit from top-ups and microloans via Bim even though they were less significant than before, she replied

> "Oh yes, I get my percentage from top-ups and my percentage from collecting for Compartamos, which isn't much, of course, but you know: céntimo by centimo [cent by cent], you make a sol, right? So, well, when you run a business sometimes you have it not to suddenly make a fortune, but to accumulate the little bits."

For the bodegueras that I have presented in this chapter, like Heroína and María, as well as many others that I visited with the Bim advisers and Dylan, their economies have systematicity and regular identifiable forms: they are thoughtfully and affectively organized—and permanently assessed. As Dylan added to Heroína's analysis on profit margins, "it's dynamic work." Their economic arrangements are more multiple (resulting from many income sources, or resource-ings), less rigid and more dynamic and impermanent in comparison to other arrangements but still clearly readable to them.

Thus, with Hart, "informality is in the eye of the beholder"; the "informal economy does not exist in any empirical sense: it is a way of contrasting some phenomena with what *we* imagine constitutes the orthodox core of our economy" (my italics). Again the 'we' that imagines in the

former quote is that of scholars and experts, it represents the standpoint of makers of standards and measures of what constitutes the economy, how the economy should properly work and, by extension, how the economy becomes the reality –or the environment in which everything else happens.

Economic anthropologist Karl Polanyi (1957) states that the economy is an "instituted process", meaning that in every society the economy depends on a variety of institutions in which human life is embedded and not only on markets. For him, there is a problem when empirical economies in their diverse forms, such as the ones existing in the bodega's universe, are studied and governed by what he calls 'formal economics', an "analytical method devised for a special form of the economy (…) dependent upon the presence of specific market elements."[258] Formal economics understands "the economy as a sequence of acts of economizing, i.e., of choices induced by scarcity situations"(247), in which people need to 'rationally' choose "between the alternative uses of insufficient means" (247). In human economies, however, people's livelihood does not necessarily imply choice.

Furthermore, for Polanyi, not every choice is induced by insufficiency of means, "indeed, some of the most important physical and social conditions of livelihood such as the availability of air and water or a loving mother's devotion to her infant are not, as a rule, so limiting" (244). Thus, "the relation between formal economics and the human economy is, in effect, contingent" (247). In my fieldwork, bodegueros and their clients operate within human economies where options are as abundant as the many advisers that walk around and visit them regularly. As they keep their options open and flexible, they make ends meet. However, the more banked they become, especially with the

[258] Karl Polanyi distinguishes formal economics from "substantive economics": "substantive derives from man's dependence for his living upon nature and his fellows. It refers to the interchange with his natural and social environment, in so far as this results in supplying him with the means of material want satisfaction" (1957: 243).

introduction of microloans, the more their economy shifts towards a market economy governed by scarcity and control.

Polanyi considered formal economics as an inadequate "method of inquiry into the working of the economy," assuming all economies operate as price-making market economies. From an STS standpoint, formal economics are also practices that actively shape economies and not only (inadequately) study them (MacKenzie 2008; Callon 1998, among others). International economic policies steam from that scarcity perspective and, infused with a sense of urgency, aim to transform all economic practices into market-oriented ones through policies, regulations, training, and business development. Financial inclusion frameworks and financialization practices described in this chapter belong to the network of practices that constitute the 'formal economy.' These practices, justified by the affects of scarcity and urgency, *flexibilize* the human aspect of the economy in the name of economic growth (formal economy). In my account, formality is not organized around improving living standards for people (workers) but around experimenting on how much formality is enough and cost-effective to incorporate the money of the poor—or to bank previously unbanked money-into the financial system.

Finally, Bim mirrors and mimics the environments and practices through which it is deployed—a technology that lacks capital but thrives on recurseo. Unlike other wallets fully backed up with capital and resources by their individual bank owners, and designed to expand and colonize, Bim survives across many different contexts through the different tinkering practices described through these pages. When Bim was a collective tool, of a partnership of banks (albeit in unequal conditions), it had the potential to do banking differently. Now, however, that is it mostly controlled by Financiera Compartamos (with 79.5% of its shares as of 2022), it is becoming mostly a successful tool for expanding microloans and debt relations through mainstream finance, and that potential seem less likely to be realized.

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I used to think that Bim had many lives, moving from one to another. For Margarita, one of the leading engineers at PDP, it was more like Bim had many universes: some grow and some shrink. Bim, in her words, was involved in many initiatives—*algunas pegan, otras no pegan*, some stick, others don't—"some take forever to launch," like batch transfers with Banco de la Nación, the national bank, "and then the COVID -19 pandemic made it to take off super-fast. It's a process of constant learning" (*es un constante aprender*).

Bim exists in many universes, living many lives—a technology that ends up behaving like the people it is supposed to bank, constantly surviving through recurseo.

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