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Digital Entrepreneurship in Africa

How a Continent Is Escaping Silicon Valley's Long Shadow

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4 Viable Strategies

Chapter 2 highlighted that African digital enterprises focus mostly on domestic and regional markets. Chapter 3 showed how they become deeply entrenched into their local contexts through learning from customers and adapting to conditions, while global competition is overwhelming in digital markets where scaling depends less on physical assets and social relations. The key implication is that African digital enterprises need to use contextualized unique strategies to become sustainable and grow. By virtue of enterprises being located in African cities, these strategies will have to look different from those of Silicon Valley role models. African digital enterprises achieve sustainability not by pretending that the digital market playing field is geographically level, but by doing the opposite: turning their ostensible locational disadvantage into a unique value proposition and competitive advantage.

This chapter analyzes how exactly African digital enterprises do this: how they can become sustainable and grow. There are countless aspects that a given entrepreneur in a given city may learn over time about the complex, diverse, nascent, and uncertain African digital market environments around them. Yet our analysis suggests that most successful digital enterprises pursue one of four strategies: (1) scaling based on customer and partner relationships, (2) becoming local information platforms, (3) investing in local assets that have value for corporate customers in high-income countries, or (4) blending a digital platform backend with an analog structure to reach end users with limited digital infrastructure access (what we call *last-mile platforms*). This chapter dedicates one section to each strategy.

Overall, this chapter shows that the growth trajectory even of successful African digital enterprises very rarely resembles a hockey stick. Instead,

almost all enterprises in our sample followed slower, linear scaling patterns, not dissimilar to analog enterprises. The ones that were able to exploit network effects and scale exponentially only did so up to the threshold that their market access allowed them to. In the end, African digital enterprises find ways to achieve sustainability and success, but this takes time, and they often face an upper threshold to growth that is set by proximate economic legacies.

This chapter's scholarly contribution is the development of a theory on competitive digital entrepreneurship strategies in resource-constrained environments and an explication of how analog value creation works in concert with digital infrastructure as an external enabler of entrepreneurial opportunity (Briel, Davidsson, and Recker 2018). The four strategy templates also provide a more concrete understanding of the "Goldilocks embeddedness" of digital enterprises (Quinones, Heeks, and Nicholson 2017) in local and global sociotechnical networks.

Scaling Based on Customer and Partner Relationships

The first strategy is also the oldest: enterprises develop software and scale based on good relationships with customers and partners. This strategy is usually preferred by software development and IT systems companies (like Pivot Access in Rwanda or Champier in Mozambique, as well as freelance software developers and microenterprises). In our sample, localized and often sector-specific enterprise resource planning systems (ERPs), supply chain and logistics management systems, full-service IT consultancies, and business analytics providers were dominant.

In this approach, digital enterprises interact directly with customers (through calls, meetings, conversations, emails, etc.) when selling software, code, and related services to them. Enterprises usually also engage with clients after sales, mostly to conduct maintenance and provide customization to meet evolving client needs. Growth happens when enterprises are able to deliver high technical quality at locally competitive prices because this usually triggers customer referrals or allows enterprises to integrate with larger partner networks. Given the high cost per user that comes with regular trust-based interactions, customer relationship scaling exists almost only as a business-to-business strategy.

We found that this strategy suited the capabilities and constraints of many African digital enterprises. Founders did not typically need large up-front investments: they made the first revenue through their own labor as software developers or worked in very small teams—for instance, using free and open-source software development kits and content management systems (like WordPress or Ruby on Rails) to set up customized websites or servers for local businesses. This strategy is also simple and brings sustainability more predictably for founders: digital enterprises make money immediately after launch, directly from clients instead of from third parties.

For many enterprises in our sample, the strategy was also advantageous because strong local relationships brought protection from global competition. Through customer interactions, digital enterprises learned how to customize products specifically to local customers' needs in ways that off-the-shelf solutions from globally operating providers could not. Moreover, international providers were typically too expensive and offered a level of technical sophistication or complexity that was too high for local demand. Foreign competitors' products were also sometimes unaligned to domestic regulations or other local conditions (e.g., cost-prohibitive/impossible international payment integration, not considering currency risks, no maintenance available in Africa). In most cities we visited, we found local ERP providers who could provide simpler, cheaper, and locally adapted versions of SAP (a global software provider with a focus on ERP software suites). A business analytics provider relates an apt metaphor for this type of differentiation:

We were like, "Look, you guys are paying \$2,000 for [the global incumbent's solution]. Here is almost the same: beautiful design, fantastic data. I'm going to charge you \$300." Companies . . . were like: "But you don't have functionality of [the global incumbent]." I'd look at these guys, and I'm like, "Wait . . . you're willing to pay \$2,000 for a Lamborghini to sit in Nairobi traffic?"

Finally, customer relationship scaling evolved easily from many entrepreneurs' personal and professional backgrounds. Many entrepreneurs started their own companies after first working at larger local software development firms, and initial customers and partners were often friends or colleagues. Similarly, some entrepreneurs used their unique positioning in local business networks as a foundation of their businesses. In one case in Accra, an entrepreneur had coordinated the financial technology community in the city by running events and an online community. Not only

did this let him understand a key market need (fragmented credit information for rural and low-income customers), but he also saw administrative and regulatory pitfalls. Maybe most importantly, he established himself as a trustworthy partner for other financial firms. This founder's social positioning thus made him a trustworthy expert that firms agreed to exchange sensitive financial information with, which both was a prerequisite asset and served as protection from foreign competitors.

Like for this Ghanaian financial tech entrepreneur, large corporate customers often doubled as partners for African digital enterprises. Several entrepreneurs described how they built up trusted relationships in sometimes painstaking and time-intensive encounters with corporate decision-makers because this would pay off once representatives started to exchange internal information and began to solve problems together with entrepreneurs. With very large corporations, enterprises also were able to roll out their software through the corporation's structure (e.g., equipping different offices with the same software or supplying more extensive segments of a supply chain) and to improve both their reputation and experience:

So, we got Nestlé, a big thing for us, credibility. . . . So there's nobody who is bigger, really. . . . They're renewing, and their account has increased—and we can handle [any other customer as a result]. Whoever you are, we can handle you . . . because we can work with enterprises and we've proven it. . . . Number two is, we understand even better what they need to hear because we know the KPIs, and we know the budgets. . . . It becomes a lot more seamless. (Founder of a food supply chain digital enterprise in West Africa)

The key scaling trade-off of relationship scalers' enterprises was to balance standardizing their digital products with customizing them to each individual client's requirements. At the outset, software development enterprises benefited from production-side scaling economies—namely, the ability to use freely available building blocks like open-source coding repositories, or the near-zero cost of producing additional copies of software. Yet copying and pasting code was rarely enough to gain a satisfied customer willing to pay, meaning that the marginal cost of the second copy tended to be almost as high as that of the first for most relationship scalers. The longer enterprises operated in local contexts, the better they were able to partially standardize their offerings. They learned which building blocks they could most easily repurpose for local customer groups:

So we've been trying building our products for the market but then you realize . . . clients always say, "I want that, but not that." . . . So we custom-build solutions, which is not very sustainable, I must admit. So right now, we're trying to kind of find that niche. . . . Now we are trying to productize some of our services." (Kenyan entrepreneur discussing the rollout of digital learning systems across different schools)

Practically the same trade-off applied to postsale maintenance and support, as a Kenyan small-business ERP provider explains:

The payroll module existed within [our old product]. So that was the same code, but now they're three different products. A lot of the code has been reused, but it's still different products that need to be managed differently . . . so we're very strained when it comes to human capacity and human resources. . . . There's different sets of customers, they're more or less in the same cluster. And then, because we've done this for so many years, it's very unlikely that we ever get questions that you've not had before . . . but with scalability, it will be trouble if we ever get to a point when we have thousands of customers! [*laughter*] At that point, we'd have grown the team and also automated a lot of the support. Already we're doing a lot of it: we've backed up a huge chunk of the systems with self-help videos [and we] will have a bit of user manuals in there that customers can access. But for some reason, people just want to call and ask. . . . It's normal human behavior.

Relationship scalars thus grow step by step, acquiring local customers one by one, with limited opportunities for standardization and scale-free rollout of their services. This means that most of these businesses become sustainable quickly while they mostly remain rather small (five to twenty full-time employees).

The exceptions to this rule were early-mover IT systems companies, usually starting to target local corporate sectors with the highest willingness to pay (like banks, utilities, insurance companies, hotels, or hospitals) from the late 1990s or early 2000s. It appeared that in every city we visited, there was at least one such early-mover local IT company that had grown quite large, with dozens and sometimes hundreds of employees. A founder of a large systems development company in East Africa claims that there is no secret to the enormous growth of his venture into one of the biggest employers in the local technology sector:

I think it just happened. There was no special initiative that I had, and really just, it was a natural growth. You try a few times, you fail, you try again, you fail. Among ten people, one of them would give you an opportunity. That's how

I think it all started. . . . It's purely recommendations from one customer to the other customer, banks in the beginning. . . . I had an IT manager next to my house, so he helped me to get into his bank. Then his bank helped me to get into the other banks and that's how it increased. . . . When [the] first customer came in, I was the only one. Then we made some money, then work came in, so I hired like two other guys. Then again work came in so we hired like another five. It was purely, I think, organic growth. There was nothing like, you know, a business plan [or] investments, it was just how it happened.

Local Information Platforms: Digitizing, Curating, and Mediating Local Content

The second strategy is to become a local information platform that offers relevant digital content to African users that is not otherwise available. Typically, this business model has worked in product categories in which users, advertisers, or other third parties are willing to pay to receive or distribute local information, like news and entertainment, classifieds sites, job boards, agricultural and health information providers, digital learning tools, and bulk SMS and ringtone intermediaries. Information is sometimes crowd-sourced from users (e.g., traffic information or local news), but mostly, African digital enterprises engage professional third parties as information providers (bloggers, doctors, advertisers, teachers, etc.). Altogether, the value proposition of such an enterprise is to be a platform that digitizes, curates, and mediates locally relevant information.

Often, African local information platforms adopt similar strategies as their high-income-country counterparts (e.g., investing in brand recognition)—yet they typically make crucial tweaks in response to local conditions. Namely, enterprises typically adjust content and formats to local language and culture, and they make interactivity technologically simple. Laptop or desktop computer functionalities or broadband access are rarely if ever required, and smartphone apps are offered only as a complementary and never as an exclusive interface. For instance, these information portals use simple online forums, Facebook groups, and Twitter as crowdsourcing channels, or they integrate SMS and USSD codes.

While most local information platforms stay small, some first-movers are among the biggest digital enterprises in Africa. In fact, some of the transaction platforms identified in a 2014/2015 Center for Global Enterprise study (David-West and Evans 2015) belong in this category. The authors used desk

research to compile data on African platform enterprises that had raised \$1 million or more in investments. Among the forty-two identified platforms, long-standing portals with a Pan-African profile are featured, such as IROKOTv, OLX, Cheki, Jobberman, and BrighterMonday. These enterprises exploited windows of opportunity to pursue local market leader status in the early 2010s, later giving them the brand recognition and resources to expand across Africa or to merge with companies that had become domestic market leaders elsewhere (e.g., consolidating under the umbrella of the One Africa Media Group and later Ringier One Africa Media). A founder of a job portal describes an approach not dissimilar to the user base scaling strategy known from US transaction platforms (see chapter 1):

This [was] before we got funding. . . . At that time, we had to do some growth hacking. . . . At that time [in 2011], even though internet was free on campus, not everybody could access it because you had to know either a lecturer or a friend that could give you some ID [and] internet was available in the town but it was quite expensive. . . . At that time, Facebook was pretty much popular within the school community. . . . So what did we do? . . . We were going to invite them to [our page] on Facebook. So our strategy was, invite everybody together, start pushing the jobs through that page and they will click and it will grow from there. [I'd give] you twenty minutes worth of data [for Facebook] but after then, you give me your username and password. I'm not going to use it [other than] to invite people into [our] page. It's a job's page . . . because they really, really wanted to check their Facebook. . . . Before we knew what was happening we got five thousand members, seven thousand members and we started posting jobs into the Facebook page and all of a sudden our traffic started growing . . . and the whole of [our home city and nation] started knowing about [our portal]. . . . We were not really concerned about competition. We were really focused on the product itself, on the website. We wanted to have all the jobs. [We only] asked ourselves, "What are the things that we can do for these guys to use us more?"

While this focus on growing a user base as quickly as possible is similar to, say, Facebook's strategy, it is striking that no African companies have been successful at leading in those information platform markets in which content is entirely user generated. These digital product categories were always dominated by US platforms. For instance, we were unable to find African social network sites, social media, and messenger services (competing with Facebook, Twitter, Instagram, Pinterest, Gmail, or WhatsApp). The few travel portals we found (like Pan-African Jumia Travel [formerly Jovago], Hotels.ng in Nigeria, or GetRooms.co in Ghana) are competing

with globally operating platforms like TripAdvisor, Booking.com, Airbnb, and the like, but on a closer look, they differentiate themselves via unique access to local information, typically sourced through extensive partner networks. Platforms that do not offer unique local information appear to have faltered soon after the arrival of broadband and smartphones—when US-based user-generated content platforms started to penetrate the African market and overwhelm local providers with combined national- and international-level network effects. For instance, South African social networking service Mxit, which was initially celebrated as an African role model digital enterprise, stopped operating despite its product design arguably being a better cultural and technological fit to local markets (Chigona and Chigona 2008; Thomas 2015). The local information platform strategy, as we identify it, thus involves a combination of localized procurement and curation of information to compete in the local attention economy of consumer-oriented digital services and applications (see Wu 2016).

Yet local information platforms are *asset-light* (Evans and Gawer 2016) in the sense that they do not build up analog operations to reach end users (e.g., drivers, kiosks, warehouses, agents). Information portals may set up small call centers or digitally facilitate and secure interactions between users, but they do not internalize analog interactions and transactions into their value proposition (e.g., the actual sale of a car is not handled by Cheki). We therefore do not categorize African e-commerce companies with extensive in-house logistics and analog customer outreach under the information portal category, instead discussing them as last-mile platforms ahead.

Although some relatively large African digital enterprises fall into the local information platform category, they have remained much smaller than comparable companies in high-income countries. Our analysis suggests that this is because network effects can only unfold to a smaller extent, given that user-driven interaction and content generation is more limited. As a result, neither user lock-in nor data-driven scaling economies typically materialize (see chapter 1), while returns from online advertising also remain low (see chapter 2). The job portal founder quoted earlier highlights how his company's strategy shifted when the user base scaling effect had been exhausted:

The growth rate reduced, but at that time, one of the things we were looking at now is to consolidate, make money. . . . The goal is "How do you develop a fantastic revenue model from this [charging employers seeking to advertise

jobs]?” . . . Now one of the other things we did was to also turn off some of the marketing cost.

Distant Markets, Local Assets: Labor, Market, and Culture Brokers

Scaling into high-income countries involved competing internationally by using unique local assets. The most common type of enterprise employing this strategy is the *labor broker*. Unsurprisingly, software outsourcing firms were dominant in this category, including notables like Andela and Gebeya (see box 4.1). To effectively tap into international markets, software outsourcing companies typically conducted dedicated customer acquisition and relationship management, establishing a local office or placing a permanent representative in important target countries. This was typically a response to trust deficits and scale disadvantages toward Asian competitors in the commoditized global software outsourcing market (see Lehdonvirta et al. 2019; Mann and Graham 2016). These enterprises also depended on and actively nurtured local and offline assets (like physical training facilities, employee satisfaction, etc.), even if this can be costly and a financial risk:

This had to make money. . . . If you're investing infrastructure, so for example, you pay for buildings a year in advance—and these are things that are required for the business to thrive. You pay for generators a year in advance, or two or three years in advance. There is not like a leasing option or anything. You have to buy assets. Computers had to be paid for in full! [*laughter*] So there is very high capex [capital expenditure] to do this very well. (Cofounder of an outsourcing firm)

The smaller outsourcing companies in our sample were typically unable to secure up-front investments. These businesses instead relied on immediate revenue generation, based on long-term trust-based relationships with select foreign customers, referrals, and competing on price:

We'd develop it, roll it out in Europe, get iterative feedback, make whatever changes are necessary, even . . . compete based on price because . . . we could afford to develop [software] cheaper than our competitors in Europe. (Outsourcing company founder in Yaoundé)

Initial contacts with customers were typically established ad hoc—for instance, through referrals, at events, or from founders' previous stays abroad. In effect, these digital enterprises were customer relationship scalers, but the initial relationships were with customers in high-income countries:

Box 4.1**Andela and Gebeya: African Adaptations of Software Outsourcing**

Unabating demand for programming in high-income countries has propelled software outsourcing sectors in the Asia-Pacific region to become major technology employers. African outsourcing has lagged early policy hopes (Mann, Graham, and Friederici 2014; Mann and Graham 2016), but two African digital enterprises, Andela and Gebeya, have recently rekindled optimism and investor interest. Each is offering a unique twist to traditional outsourcing.

Andela started with formal headquarters New York City and a campus in Nigeria, soon expanding across Africa by setting up sites in Nairobi and Rwanda. The word “campus” gives away Andela’s ambition: to be more than a soulless software factory and instead offer a full-fledged educational program for young software engineers. Coders are trained over several months, up to a point at which they can conduct projects for customers with little supervision. To become particularly appealing to top graduates, the company heavily invests in a distinct organizational culture and brand. Andela stresses its mantra that “talent is global, but opportunities are not,” uses multimedia storytelling about the career potentials of software developers, and emphasizes its high-profile investor network, including Mark Zuckerberg and Generation Investment Management, an investment firm cofounded by Al Gore. Andela’s US American and Nigerian team of founders are well-connected, and they have quickly become media darlings, with numerous features in global tech media outlets like TechCrunch (e.g., Shieber 2019). Andela’s New York headquarters serves as a legal liaison for its customers, who are mostly based in the US. Andela is a unique example of an ambitious American-African enterprise able to mobilize significant risk capital to build analog structures in African cities at an efficient scale.

The lesser-known but no less ambitious Gebeya attempts to create a marketplace for software developer talent. African coders are matched to suitable jobs from clients from around the world—so far, mostly from Europe. Although Gebeya offers quality control and offers trainings, its approach ultimately employs a lower degree of process control and seeks to leave a greater share of revenue with software developers than that of Andela. Gebeya uses its access to Ethiopia’s vast number of technology graduates. Amadou Daffe, Gebeya’s CEO and cofounder, also draws on his connections to software developer scenes across Africa, built up through his long-standing work with Coders4Africa. Gebeya recently established a London representation to interface with UK customers.

Last year, [there was] this big Japan-Africa conference, so, [we were] very much featured during that whole thing . . . [but] there are definitely some contracts that we will not even touch. I will not walk into Toyota, or even if they came to us, those are basically deals that will break you, and at this point I'd rather go slow, but we basically get to the finishing line. There is Japan, the people in France, they were talking to us because they saw what we were able to do for the Japanese market. . . . Right now, basically, small- to medium-sized companies are what you might call our niche market and also, startups . . . they can't afford a Japanese developer, then they start looking for outsourcing. (Outsourcing founder in Rwanda)

Beyond labor brokers, we found *market brokers* that directly targeted business customers in high-income countries. These digital enterprises turned local market knowledge into a product with value to organizations in high-income countries. For example, one digital enterprise in Ghana had long functioned as an agricultural information provider for local farmers when it realized that its years of experience and growing database on agricultural supply chains had become a unique asset with value to the global food production industry. The enterprise decided to place an account manager in Geneva, letting this person become a liaison between food corporations and the enterprise's local knowledge and network. At the time of our fieldwork, the enterprise was planning to add technologies like drones and further deepen its farmer network to improve the informational value that it could add to global supply chains. We found similar market brokerage underway from a business analytics provider in Accra, an accountability-oriented social enterprise in Lagos, and a men's fashion e-commerce provider in the Ivory Coast.

The third type of enterprise we found using particular local assets to target an audience in high-income countries is the *culture broker* (cf. Pijnaker and Spronk 2017). In our sample, there was only one example: the success story of Kiro'o Games (box 4.2), located in Yaoundé. It has acquired seventy-five thousand customers, most of them in the United States, by placing its role-playing game on the Steam platform.

Last-Mile Platforms: Asset-Heavy User Base Scaling with a Digital Backend

We're forging ahead into relatively uncharted territory; E-commerce in Africa is a massive market to conquer, but there are no hard and fast prototypes from which to follow; We cannot simply replicate Western models here; we have to build our

Box 4.2

Playing Games

As he opens the gate, the CEO explains that the innocuous façade of the building that houses the studio is purposeful. It's a form of security. Indeed, no one would suspect that inside there are about fifteen designers and programmers employed in the task of creating a web-based role-playing game.

The CEO discusses how he had wanted to design a game to his specifications since he was a teen. In 2013, in his early twenties, he and a partner set up the studio. Although the game play is in English, the app uses Swahili as the language of the game's world rather than one of Cameroon's 255 languages, in order to eliminate a sense of its particularity. This might be effective for a Central African audience, but its African lore, words, and avatars must seem very specific to its primary user base, located in the United States. The CEO hoped that the game could help to counter the negative image that many have of Africa. The game can be found on Steam (a gaming platform), and it has seventy-five thousand users.

Cameroonian developers, and those from many African nations, are not able to sell on the Google Play platform. This acts as a disincentive to the development of a mobile game and reduces the firm's ability to reach customers in Africa. The CEO says that a government official has tried to help by speaking to Google about the lockout, to no avail.

The company has struggled to sell games in Africa, mainly due to its inability to accept digital payments. Platforms like Google Play prevent it from accessing markets, while most locals do not have credit cards. The CEO has taken it upon himself to find a solution. "To be disruptive, I have to fix the problem." He intends to make it possible for people to pay using mobile money. Another problem with the local market is piracy. Apparently, the game costs less than a pirated game would (\$4). He feels that piracy has become a habit.

The firm is revenue positive, but not because of the game. It consults for other "startupper," teaching them how to raise funds, recruit, and manage projects. The company itself has not raised any venture capital, despite frequent international media coverage. Apparently, foreign investors do not believe that there is a business case for a game company in Africa. "I am trying to learn their language. They won't understand me. Their ideas will never work with our realities."

own blueprints from scratch, which takes significant investment, both in terms of time and money. (Hotels.ng founder Mark Essien, quoted in Nsehe 2015)

Last-mile platforms are the fourth and final local asset-driven strategy we identified. Of the three strategies targeting local and regional markets, it is the most interesting one because last-mile platforms combine the scaling potential of digital technologies with an explicit approach to tackling market limitations at scale.

Many African adaptations of e-commerce belong in this category, which includes some of Africa's biggest digital enterprises. Most e-commerce holdings of Africa Internet Group (AIG), Africa's widely celebrated first tech unicorn¹ (Knowledge@Wharton 2016), are last-mile platforms (see chapter 7 for a discussion of AIG's African identity). These holdings were mostly driven by Rocket Internet executing its venture builder approach (Baumann et al. 2018), rolling out e-commerce verticals (Carmudi for cars, Lamudi for real estate, Hellofood for food delivery, Easy Taxi for taxis, etc.) across African nations, and setting up customer-facing local operations (drivers, business development units, call centers, etc.) while centralizing organizational control and the technology stack in Paris and Berlin (Rocket Internet's headquarters). Later, many AIG verticals were consolidated under the Jumia brand. Similar nationally and regionally operating e-commerce providers include Takealot (South Africa), Konga.com (Nigeria), and Tonaton.com (Ghana).

We refer to African e-commerce providers as *last-mile platforms* to draw a distinction from asset-light information platforms and the digital platform business model known from US and Chinese corporations (see chapter 1; Evans and Gawer 2016; Parker, Van Alstyne, and Choudary 2016). We find that last-mile platforms actively address market barriers in the local analog world (see chapter 2). What they offer African end users is usually similar to what American digital platforms would offer their end users: for example, both Konga.com and Amazon allow users to have an electronics product delivered to their homes. But how customers are reached and which elements of the supply chain are internalized by those two platforms radically differs.

A last-mile platform compensates for incomplete internet access, digital infrastructures, and technological capacities by building up an *analog outreach structure* that complements its digital platform. These enterprises are asset-heavy: they actively create physical points of interaction for end

users, as well as extensive physical supply chains. Analog outreach structures typically consist of a combination of the following approaches:

- *Human intermediary between customer and technology*: A person (agent, driver, etc.) equipped with a device (POS device, tablet, or smartphone), interacting face to face with the customer wherever convenient for them (farm, busy intersection, local marketplace, etc.) to conduct transactions (e.g., cash on delivery) or digitize the customer's information (e.g., recording a farmer's stock)
- *Customer and supply chain training and onboarding*: Extensive technology- and product-related workshops and seminars for customers and operational staff (agents, drivers, etc.)
- *Physical supply chain and logistics*: Warehouses, drivers, motorcycles, and so on as proprietary company assets rather than outsourced to third parties
- *Low-tech customer support*: Enabling SMS, USSD, and WhatsApp-based support; building up local call center capacity for quick callbacks

A Ghanaian e-commerce entrepreneur explains how market needs drove him to adopt these strategies, despite the higher cost:

Ideally, we want the business to be run online. It would help us scale faster but we still have . . . a customer service person take his [the customer's] call because either he's not too comfortable browsing or they want the face behind the website. . . . We have that option because we can't stop people . . . so we help them through the process. . . . We get our . . . leads monthly, 45 percent [via] SMS, about 33 percent would be calls, and then rest emails.

While African e-commerce providers have been recognized to employ these strategies (David-West and Evans 2015; Kaplan 2018), the last-mile platforms in our sample cover other domains as well, such as payments (using kiosks and agents to allow customers to buy mobile credit), agriculture (stock management and aggregation for small-holder farmers), logistics (aggregating domestic shipping demand for small businesses), and connectivity (solar-powered internet kiosks aggregating local content and services). Star products like M-Pesa and M-Kopa Solar are also last-mile platforms per our definition: they are celebrated as digital enterprises, but their key innovations lie in how they blend digital scaling potential and physically reaching out to millions of end users (Joseph 2017).

These examples show that last-mile platforms can grow relatively large and benefit from network effects, provided they are able to establish a solid and widespread user-facing structure. Still, the growth that last-mile platforms can achieve is inherently slower than that of asset-light digital platforms from the United States. This is because asset-heavy last-mile platforms by definition face higher marginal costs per user, and they by definition lose out on some of the potential of digital technologies to let users cocreate value (see chapter 1). African platforms thus internalize a larger proportion of total value creation compared to known digital platforms from high-income countries. As a result, they have to achieve relatively higher margins in a context in which users and advertisers usually have a low willingness to pay (see chapter 2).

This insight may explain why, after an investor gold rush on African e-commerce in the early 2010s, ambitions have recently been tempered. Emerging findings call into question whether asset-heavy platforms can satisfy risk investors' expectations of vast, self-sustaining financial returns upon securing market leader positions. Significantly, media reports indicate that Rocket Internet has withdrawn as the lead investor of AIG (Akinloye 2018; Ekekwe 2015; Mutegi 2017). Disrupt Africa (2017a), using 2015–2017 data from 264 e-commerce providers active across twenty-three African nations, assesses that less than 30 percent of those providers were profitable.

The entrepreneurial challenge for African last-mile platforms is thus to accept that the build-up of analog outreach structures may be necessary while doing so in a cost-efficient way, drawing on more limited up-front investments. This means last-mile platforms have to be creative when it comes to scaling. They face difficult balancing acts: their market environment may signal that they should internalize and control value creation (top-notch software engineers; owning devices, kiosks, motorcycles; employing drivers, agents, etc.), but this comes at higher cost and higher risk, effectively running counter to the value orchestration idea of digital platforms (see chapter 1). Well-thought-out incentive schemes for field agents are often a must:

I saw you can actually be a vendor and a reseller of airtime . . . so we came up with a scheme of credit. We give [our agents in the field] twenty-four to forty-eight hours of microcredit on services that they can resell—that doubled our revenue! (Internet kiosk provider in East Africa)

Especially in Rwanda, where interviewees often cited their ambition to contribute to the nation's development agenda, founders were satisfied that, through outreach structures, they contributed to job creation for underprivileged populations:

One thing that I get so grateful [about] is the external layers of [my product] because . . . now close to two hundred people are making commission money out of the system [by selling] airtime, electricity [vouchers]. That's a big number and I feel grateful about it. . . . This is an ecosystem that is always going to be dependent on [our product]. There's always people who are making money because we created the system. (Experienced entrepreneur in Kigali)

Most last-mile platform startups in our sample did not receive major up-front investments, or what they received was used up to build software engineering capacity. As a result, partnerships with well-resourced and well-known local corporations and institutions became an important alternative to improve a platform's branding or outreach structure. The entrepreneurs we interviewed explicitly framed their efforts as building *ecosystems* and *networks*:

We're building a deeper financial ecosystem for the drivers. . . . We want to make a system that lets them to be able to automatically save money for children's school fees, build an additional credit score. . . . The exciting thing is linking those features in a digital wallet, so that, basically, we can gamify, or make carrots and sticks, for the driver . . . trying to create behavioral incentives, to nudge people towards the way we want to work. (Ride sharing enterprise in East Africa)

Essentially, what you're asking is the dilemma you face in building a two or even a three-sided marketplace. In our case, the first side you always build is supply because if someone makes a request and then you can't fulfil it, then you've lost that customer and maybe a whole lot more. So it was important to first have capacity on the network, so we started out with three riders. . . . So the way we are scaling is not by considering to buy or finance motorcycles ourselves, not with investor funds, but rather working with top parties who will finance motorcycles, for a very small fee. For example, we've got a partnership with [the regional government] to finance about twenty motorcycles at about 5 percent interest rate per annum, which is much better than the 25–30 percent we'd get from the Nigerian banks. We're also working on a financial scheme to allow more drivers to come on board our network, even if they don't have their own motorcycles. . . . We look at our data, we look at how many deliveries we're doing, we look at all the factors that are influencing our performance. (Delivery provider in West Africa)

In sum, we find that last-mile platforms represent a promising digital enterprise strategy that is well suited to address sizeable African consumer

or small-business markets, not because they copy the digital platform model that has been successful at a global scale (Parker, Van Alstyne, and Choudary 2016), but because they explicitly address infrastructural and capacity challenges that transnational competitors cannot address. Yet how exactly analog outreach structures can be blended with digital platform backends is not easily generalizable. Instead, last-mile platforms are currently engaging in intricate process and business model innovations, based on iterative managerial and entrepreneurial learning and intervention (see Athreye 2005; Kashyap and Bhatia 2018; see box 4.3).

Summary: Location-Based Strategies and Hyperlocalization

In this chapter, we presented four strategies that have allowed African digital enterprises to achieve sustainability, detailing our findings from the previous chapter that suggested African enterprises are localization experts. The businesses we analyzed make money and survive. Even self-sustaining user base scaling existed for some platform enterprises in some local and regional market niches (see table 4.1). However, their growth was inherently confined to be slower, and it was capped earlier than for transnational digital platform corporations. Notably, African digital enterprises' value creation and capture strategies almost never used artificial intelligence or other sophisticated data collection and processing techniques—a stark difference to the archetype of the data-driven platform business model (see Mayer-Schönberger and Ramge 2018; Srnicek 2016; Zuboff 2019). Large transnational digital corporations extract data wherever their users are while analyzing the data in specialized centers (Malecki and Moriset 2007; Singh 2017). African digital enterprises, however, may be able to neither target distant markets nor mine and process data at significant scale, which sets a low threshold for growth when local markets are small, as in most African countries.

The most promising digital enterprises blend digital and analog value creation. Such assemblies of locally specific knowledge, organization, finance, and so on are remarkable innovations in their own right (Rodrigues et al. 2018; Taura, Bolat, and Madichie 2019). They have significant scaling potential, but this potential is still not comparable to Silicon Valley business models. Notably, within coherent home markets, self-sustaining, network-effect-driven user base scaling was possible to an extent for some

Box 4.3**AgroCenta: Transforming Food Supply Chains through a Digital-Analog Agricultural Platform**

Francis Obirikorang and Michael Ocansey are about to leave the city, heading toward Ghana's Northern Region, squeezing in our research interview at the Airport Shell Mall Accra. They insist that digital entrepreneurs—especially techies like they once were—ought to “get out into the field more” if they really want to understand how digital products can conquer markets at the bottom of the pyramid and address the needs of the rural poor, with all their complexities and challenges. The two founders had been coders for most of their careers, creating well-designed and functional apps and software. They are still proud of their developer skills, but their experience with launching AgroCenta taught them that having a great app is a necessary but not a sufficient condition to build a great digital enterprise. After years of engaging with farmers in the north of Ghana, they realized that the existing supply chain—offtakers and other middlemen placing orders, shipping whatever produce was there, and coming back days later to pay and place new orders—came with vast inefficiencies. Goods were spoiled when they were not procured, and smallholder farmers could not satisfy larger requests on short notice. Across the thousands of farmers in the region, high-value produce was abundant and sometimes went to waste, but there was no cost-effective way for offtakers or large corporate customers to understand stock levels.

The market opportunity was now clear: stock management and aggregation of demand and supply across smallholder farmers in the north of Ghana. However, through their interactions, Francis and Michael knew that farmers would not independently use digital technologies in the foreseeable future and that farmers wanted to have cash in hand when selling their produce. Only a combination of agents equipped with tablets and a digital platform backend could work to effectively engage all stakeholders of the agricultural supply chain (farmers, distributors, offtakers and traders, corporate clients). AgroCenta decided to recruit trusted, locally based agents who regularly engage with farmers. The enterprise also employed agents with smartphones to sit on delivery trucks to make sure that less produce gets lost on the way. For large corporate food producers like Guinness, AgroCenta was soon able to deliver sufficient quantities of produce at a cost that producers could never match if they tried to do the same with their own field agents. Over time, AgroCenta integrated more apps in their product line—for instance, ones allowing third parties like loan and insurance providers to interface with farmers. Ultimately, AgroCenta created a blended digital-analog regional agricultural platform, solving information, transaction, and allocation problems for all sides involved.

Table 4.1

Four viable strategies for African digital enterprises

	Value creation	Market scope	Scaling pattern
Relationship scalers	Developing customized software for local business-to-business market	Local corporate sectors (banks, insurances, etc.)	Linear, one-by-one customer acquisition, standardization vs. customization
Local information platforms	Digitizing, curating, and mediating locally relevant information	Local consumers and businesses	Localized user base scaling (network effects) with limited revenue potential (limited online ad market)
Local assets, distant markets	Local assets (labor, market knowledge, culture) with value offered to high-income country clients	Corporate clients in high-income countries	Linear, ad hoc, based on relationships or customer acquisition
Last-mile platforms	Analog outreach structure with agents (drivers, kiosk owners, etc.) and devices (tablets, etc.); digital platform backend	Local consumers and microbusinesses	Localized user base scaling (network effects) at high marginal cost

local information and last-mile platforms. However, we did not find any instances of user base scaling for African digital enterprises targeting high-income countries.

The bottom line of our findings is that impressive individual success stories of digital enterprises exist, but we cannot find strong evidence that a significant number of ventures are attaining the scale that would be necessary for significant local economic development to result from this activity. Contrary to images of swift and easy growth on the back of “ubiquitous” digital technology, the enterprises in our sample almost always experienced slow and painstaking progress.

Contrary to what digital entrepreneurship discourses claim and what management theory implies (see chapter 1), for each strategy, the fact that digital enterprises were located in Africa mattered greatly for effective and

workable strategic choices. In each case, physical space and physical embodiments of digital enterprises (founders and their networks, employees, infrastructures, etc.) affected which market opportunities these enterprises were able to exploit and how. In each case, the availability of digital technologies was an external enabler of entrepreneurial opportunity (Briel, Davidsson, and Recker 2018), but enterprises blended digital technologies with analog local contextual realities. The strategy templates thus provide a more grounded and concrete sense of what specialization in localization consists of. Similarly, the templates explain the “Goldilocks embeddedness” of digital enterprises in low- and middle-income countries (Quinones, Heeks, and Nicholson 2017), highlighting exactly how they become embedded in both global and local sociotechnical structures.

In the end, African digital enterprises are succeeding by doing the opposite of competing for vast, level, unbounded, global digital markets. The most successful enterprises *hyperlocalize*, if in ways that still exploit some of the scaling potential of digital technologies. One experienced investor we interviewed in Ghana articulates how hyperlocalization may work at scale:

My thesis is very simple. There are a lot of African businesses that are offline that make money. The strategy is that everybody has a phone so my fundamental investment is “invest in businesses that are driving those businesses online.” Simple, because in the innovation world, you are not going to change people with technology. You have to look at what people already do and say: “You can do it better with technology.” . . . Separate companies, and they’re mostly in urban centers. Then, I want to create a Pan-African delivery company but what I’m going to be doing is invest in these guys to become more hyperlocal. So I now start getting from Lagos to Abuja . . . it’s hyperlocal. So you need to have guys who have a lens that is zooming further in—not zooming out. . . . Because really the biggest advantage you have is knowing how to deliver in Lagos, and I want you take that and apply it to Abuja; I want you to apply that to Port Harcourt, because it will be much more harder for you to come from Nigeria and figure that out in Accra. If somebody is [already] doing it in Accra? Great: you become partners. He focuses on Ghana, becomes more hyperlocal in Ghana. You become more hyperlocal in Lagos and my promise to you is that I can get you DHL, so I get you big business. So I get you into the B2B play, which makes you money because individually you can’t go talk to DHL, but because I create the holding corp[oration], which will sit in London or Berlin or somewhere, I can go to DHL and say: I can do deliveries, seven countries. . . . DHL doesn’t want to be hyperlocal—they’re a global company.