

The Development of the Kenyan Mobile Ecosystem

By Ryan Jung and Flavio Feferman¹

¹ Haas School of Business, University of California Berkeley

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I. INTRODUCTION

Across the globe from Singapore to Santiago and from Copenhagen to Cape Town, cities and countries are attempting to design and build technology hubs as a significant part of their growth strategies for the 21st Century. One hub that has gained considerable media attention is the “Silicon Savannah” in and around Nairobi, Kenya. The development of this technology hub highlights several important themes for other regions looking to create similar hubs including: 1) the interaction between government, private, and academic, and in some cases, non-profit organizations, 2) the need for technology platforms with significant market reach, and 3) the importance of addressing market and institutional voids by the players within the ecosystem. While much progress has been made in Kenya, significant voids still remain and will need to be addressed in the future for the Silicon Savannah to fulfill its promise.

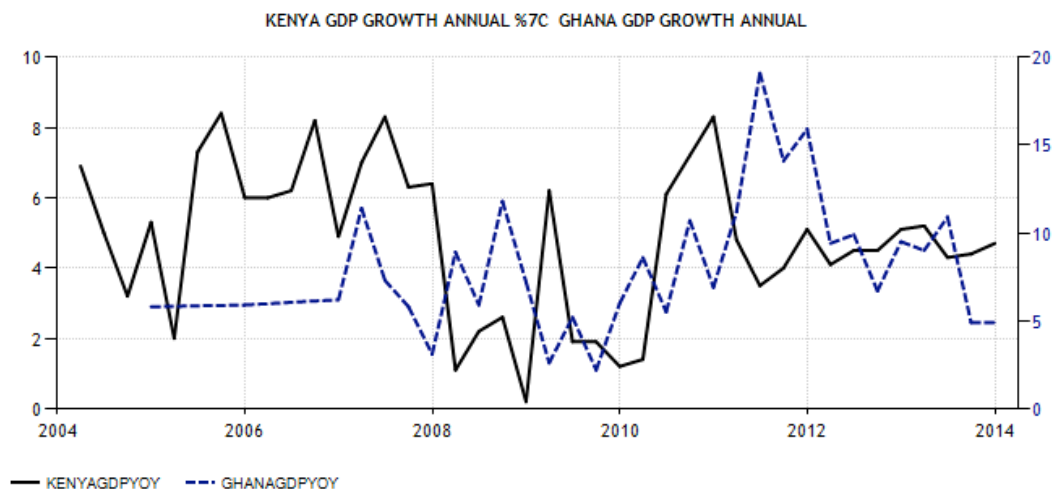
II. MACRO OVERVIEW

a. Major Voids in Kenya

This paper will start by highlighting some of the major market and structural gaps that exist in both Kenya and other sub-Saharan African markets. This is done to provide background and context for the subsequent analysis. Kenya will be compared to other sub-Saharan countries at a similar stage of development.

According to the World Bank¹, Kenya had the world’s 86th largest economy in 2012. Kenya is part of a group of emerging African countries which have exhibited improved economic performance over the past ten years. Figure 1 presents Kenya’s recent economic growth as compared with Ghana, another emerging African country with a similar-sized economy (ranked 84th by the World Bank)².

Figure 1: GDP Growth Rates 2004-2014 for Kenya (solid) and Ghana (dash)



With a steadily growing economy (with the exception of the 2009-2010 worldwide economic downturn), Kenyans are in a much better position than 10 years ago. However, there are many gaps which we will highlight shortly that could threaten to slow this growth in the future.

Kenya shares many significant voids with other sub-Saharan African countries. The lack of physical infrastructure in Kenya – such as efficient distribution networks to support regional supply chains – is a major impediment to running businesses. This also extends to limited banking and payment infrastructure for transmitting financial information and transaction data. Kenya’s financial infrastructure appears slightly ahead of other sub-Saharan African countries (exclusive of South Africa) based on many of the metrics contained in the IMF Financial Access Survey³, World Bank Financial Inclusion DataBase⁴, and MasterCard’s Cashless Journey Report⁵. Finally, it should be noted that the legal framework for the protection of property rights, including intellectual property, lacks many of the modern safeguards that exist in developed countries. These gaps create a more challenging business environment as compared to more developed markets. The World Bank’s Ease of Doing Business Rankings⁶ are provided below – we will be using South Africa, Ghana, Cameroon, and Tanzania as comparables with Kenya throughout this section of the paper.

Table 1: Ease of Doing Business Rankings for Selected African Countries

Ease of Doing Business	Kenya	Cameroon	Ghana	South Africa	Tanzania
	129	168	67	41	145

Despite Kenya’s recent economic growth, the rankings indicate that a large gap persists between Kenya and other African countries such as Ghana and South Africa.

From a consumers’ perspective, gaps exist in information about products and businesses, so testing new products and services comes with inherent risks. The lack of reach of financial services also makes purchasing goods and services more difficult. Kenya has a 42% rate of participation in the formal banking sector⁷. While low, this rate is well above other African countries which points to the impact of M-PESA which will be discussed later in this paper. For comparison, the formal financial inclusion rates are as follows:

Table 2: Participation Rate in Formal Banking

Participation Rate in Formal Banking	Kenya	Cameroon	Ghana	South Africa	Tanzania
	42%	15%	29%	54%	17%

Although the exact numbers are not available, the World Bank⁸ estimates that about 12% of Ghana’s population has been enrolled in tertiary education. This number is closer to 4% in Kenya. Ghana appears representative of West Africa, while Kenya is similar to Tanzania. South Africa’s numbers are not available.

Another void to note, which is somewhat common in sub-Saharan African countries, is corruption. Unfortunately, Kenya ranks high on the Corruption Perception Index from Transparency International⁹ relative to many other African countries which are experiencing a similar economic boom. This means that there appears to be higher corruption in Kenya than many of its neighboring countries. This significantly higher corruption creates distortions within the social and economic structures that interfere with entrepreneurship.

Table 3: Corruption Perception Index

Corruption Perception Index	Kenya	Cameroon	Ghana	South Africa	Tanzania
	136	144	63	72	111

b. Key Differences in Relation to Other African Markets

Along with some of the commonalities, we should also discuss some of the key factors that separate Kenya from other sub-Saharan African countries.

Compared to the rest of sub-Saharan Africa (but exclusive of South Africa), there are some critical differences between Kenya and its neighbors that we will highlight in this section. According to iHub’s “Comparative Study of African Innovation Hubs”¹⁰, Kenya has a significantly higher mobile subscription rate than other countries in East and West Africa at 77%. By contrast, Tanzania, Cameroon, and Ghana have mobile penetration rates of 55%, 52%, and 49%, respectively¹¹. This lead in mobile penetration allows for a greater reach of mobile technologies, which will be discussed later in the paper. This reach does, of course, need to be tied by common and compatible technologies and platforms. The differences in Internet penetration rates are even more pronounced with 34% of Kenya’s population having access to the Internet. Tanzania, Cameroon, and Ghana have Internet penetration rates of 5%, 4%, and 10%, respectively¹².

Table 4: Mobile and Internet Penetration Rates

	Kenya	Cameroon	Ghana	South Africa ^{11,12}	Tanzania
Internet Penetration	34%	4%	10%	41%	5%
Mobile Penetration	77%	52%	49%	121%	55%

The second critical difference is the contribution of information and communication technologies (ICT) to GDP¹⁰. For Kenya, this contribution is 11.2% compared to 8% for Tanzania, 7% for Cameroon, and 10.5% for Ghana, and only 6% for South Africa (whose economy is significantly larger).

Table 5: ICT Contribution to GDP

ICT Contribution to GDP	Kenya	Cameroon	Ghana	South Africa ¹¹	Tanzania
	11.2%	7%	10.5%	6%	8%

A final significant difference between Kenya is the dominant position of Safaricom, the leading mobile carrier, in terms of market share. In other comparable countries, there is at least one other significant mobile carrier outside of the largest player¹⁴. The market position of Safaricom has supported the adoption of M-Pesa, which will be discussed later, but also places tremendous market power in the hands of one organization with the ability to dictate prices and terms.

Table 6: Market Share of the Largest Telecommunications Carrier

Largest Carrier Market Share	Kenya	Cameroon	Ghana	South Africa	Tanzania
	67%	54%	46%	49%	36%

Each of these differences in the Kenyan market has contributed to the development of the Kenyan mobile ecosystem through the reach of mobile technologies, the acceptance of technology-enabled business in society, and the ability of a dominant market player to launch a platform with near-universal acceptance.

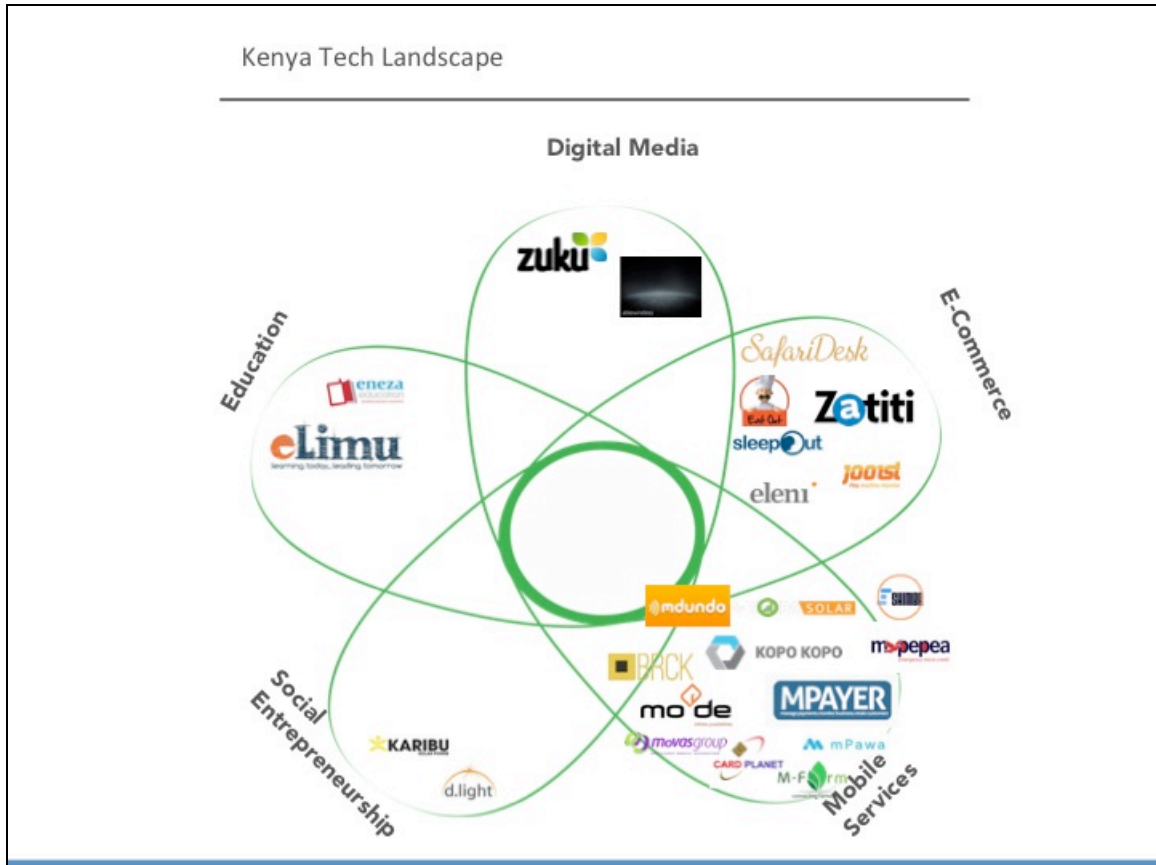
III. THE KENYAN ENTREPRENEURIAL ECOSYSTEM AND THE ROLE OF M-PESA

Now that we have examined the macro environment in Kenya, we will briefly survey the Kenyan technology landscape in part (a) of this section. We then focus on the development of the M-Pesa platform which is an important enabler of the Kenyan ecosystem, discussing some of the factors that contributed to M-Pesa's launch in part (b). We will then explore how the mobile ecosystem has enabled the delivery of physical goods and services in Kenya and the impact of this phenomenon on business models in part (c). Lastly, we will provide some concluding remarks from this section.

a. Key Players in the Kenyan Ecosystem

As previously discussed, ICT plays a significant role in the Kenyan ecosystem. ICT accounts for 11.2% of overall GDP, or roughly \$4.6 billion. The sector grew at 23% CAGR through the decade of the 2000s¹⁵. Figure 2 provides an overview of the ICT market participants in Kenya and highlights the preponderance of mobile-focused companies which emerged during the recent growth phase (see Fig. 2).

Figure 2: Kenya Tech Landscape



We will return to profiling some of these startups later in the paper to illustrate the origins, activities, and business models of selected companies.

Along with entrepreneurs and startups, universities play a prominent role in the mobile tech ecosystem in Kenya. According to a survey by research firm CPS International, Kenya has 6 of the top 10 universities in East Africa¹⁶ (no rankings are available for ICT departments). These six universities are: Strathmore University, Multi-Media University (MMU), African Virtual University, University of Nairobi, Mount Kenya University, and Kenyatta University. Despite Kenya's regional leadership in university rankings, a significant gap remains in relation to more

developed countries: none of these universities were ranked in the top 700 of the QS World University Rankings for 2014¹⁷.

In addition to universities, a small but growing number of venture investors contribute to Kenya's startup ecosystem. These include Savannah Fund and 88 mph (related to the South African accelerator of the same name), which tend to fund early stage ventures. Later stage venture investors include East Africa Capital Partners (EACP), Africa Media Ventures Fund (AMVF), Maris Capital, and Fanisi Capital. There are very few estimates of the VC market size in Kenya. FSD Kenya estimates the volume of VC funding in Kenya to be \$200m as of 2008¹⁸. This should be viewed as a starting point for an estimate of the market size as there are many players who provide capital but are not formally venture investors, including holding companies and impact investors. It is unlikely that FSD Kenya's estimate includes these players. We will explore these investor classes in the following paragraphs.

Holding companies do not exist in the same form or numbers in the US or other developed markets, but they carry significant weight in Kenya and in Africa more broadly. Holding companies are typically started by expatriates with supporting capital from their home country in Europe or North America. These holding companies use their business experience, technical skills, and familiarity with the emerging market to start companies. Often, these are well-funded, and the execution team has significant management experience. These holding companies can operate several startups at once. Some of the more successful startups in Africa including Zando (South Africa) and Zuku (Kenya) were initiated through the holding company model. Appendix II provides examples of holding company-backed startups in Kenya.

Impact investors also play a significant role in the Kenyan ecosystem. Although this paper will not delve deeply into these players, they are still a source of capital for innovative companies. It is not uncommon for impact investors and for-profit investors to co-invest in a company – this is a unique aspect of the startup ecosystem in Kenya and in many other emerging markets. There are significant funds available for investment in Kenya and other parts of Africa from this class of investors. Two important topics on impact investors will be addressed later in the paper: 1) the incentives of impact investors and for-profit investors can diverge and 2) impact investors have had a role in bringing significant media attention to the Kenyan ecosystem. Prominent impact investors that have made investments in Kenyan technology companies include Acumen Fund, Omidyar Network, GrayGhost Ventures, Khosla Impact, Accion Venture Lab, and the Bill and Melinda Gates Foundation. Most of these funds are not focused specifically on Kenya and are pan-African or even focused on global emerging markets.

There are several accelerators or co-working spaces in Kenya which are closely tied to either the universities, the VC firms or both. These include iHub (partners with Savannah Fund), 88 mph (operates an accelerator but also invests seed capital),

iLab / @iBiz Africa (incubator & accelerator for companies coming out of Strathmore University), FabLab (connected to the University of Nairobi), and m:Lab East Africa (has a partnership with the University of Nairobi and is run out of iHub; also coordinates a major tech conference in East Africa called Pivot East). These accelerators also serve the purpose of creating a gathering place for entrepreneurial-minded founders or people with technical skills to convene and test ideas. Several founders reported having benefitted from having this easily-accessible community.

Lastly, we should discuss the role of the Kenyan Government in the ecosystem. Although it does not play a particularly active role today, and one incubator manager noted that they are hard to engage, the Kenyan Government played a significant and active role in launching M-Pesa. In turn, M-Pesa acted as a platform for launching mobile technologies and is one of the foundations for the ecosystem. The next section will discuss the collaboration between the Central Bank of Kenya (CBK) and Safaricom, the mobile carrier that launched M-Pesa.

b. Development of the M-Pesa Platform

Both for the reader's context and to illustrate how the cooperation of the public, private, and academic spheres in Kenya contribute to the development of the technology ecosystem, we will trace the origins of the M-Pesa product. In this, we hope to draw out some key lessons that can be applied and considered in other localities.

Ignacio Mas and Amolo Ng'weno have written an illuminating paper on the keys to the successful launch of M-Pesa, "*Three Keys to M-Pesa's Success*"¹⁹. Prior to the launch, the main challenges with such a service were establishing trust with users who have never seen a similar product before, the chicken-and-egg problem of needing to have multiple sides of a transaction on the platform, and network effects needed to truly scale the platform.

Mas and Ng'weno discuss three key success factors, to which I will add a fourth: 1) brand development, 2) channel management, 3) pricing, and 4) cooperation with the Kenyan Government, specifically the Central Bank of Kenya. Unlike other countries, Safaricom realized that the value proposition for M-Pesa was not in consumers purchasing goods from retail channels as in many other countries, but in the important urban-to-rural cash remittances in Kenya. It thus crafted a simple brand message: "Send Money Home" and used this to initiate a coordinated product launch nationally. This included training sales staff before the launch date, targeting wealthier urban users (with higher willingness to pay) with advertising, and developing a simple user interface. In doing so, Safaricom built on the trust that users already had for its own telecommunications service which had a market share around 80% at the time.

Secondly, Safaricom had to create a management structure in order to deliver "top up" / "cash out" services for M-Pesa through its stores and new locations. In

addition to managing and training employees for these locations, liquidity management was also something that needed to be overseen. Safaricom employed master agents or agent Head Offices (HOs) to help provide these functions to individual stores. It also engaged a local firm to conduct the evaluation and training of new stores. As adoption spread, Safaricom later created the role of agent aggregators one level above HOs. These agent aggregators performed a similar function to the HOs themselves, but for the HOs instead of individual stores. Commissions are now split 70/30 or 80/20 with most being passed down to the sub-agent level (customer-facing agents). This additional layer mirrored a shift in emphasis from maintaining a consistent customer experience (the initial goal) to scalability and efficiency.

Safaricom was very transparent from the start with its pricing for various transactions on M-Pesa. Posters showing the costs of M-Pesa were clearly displayed at store locations. Safaricom only held money as it moved between deposit and withdrawal in the system, earning a margin on the transfers. Therefore, the pricing scheme was set up to incentivize new users to sign up for M-Pesa in order to receive funds from others, thereby driving volume. Deposits were free to users. The transfer fees increased when sending to non-registered users of M-Pesa.

The final key success factor was the cooperation between the Kenyan Government and Safaricom in launching M-Pesa. The Kenyan Government supported the development of M-Pesa as it was an innovation that could significantly improve financial inclusion in Kenya, which was very low at the time. The Central Bank of Kenya (CBK) was involved in the initial product development discussions for M-Pesa in 2004. By the launch of M-Pesa in 2006, mobile penetration rates were around 30% and formal banking penetration was 19% and growing more slowly than mobile penetration²⁰. As previously noted, Safaricom had about 80% market penetration at the time.

At the time of the initial discussions concerning M-Pesa, regulation for what was being proposed did not exist in Kenya. In order to accomplish its goals of promoting financial inclusion, the CBK did something different. Instead of saying that it could not or would not regulate a new innovation, it worked with Safaricom to understand the solution and create a framework to ensure that M-Pesa was aligned with the Government's expectations and regulations. By enabling M-Pesa to operate, the Kenyan Government has had to develop further regulation for branchless financial institutions and maintains an open dialogue with Safaricom to this day.

With the launch, M-Pesa picked up significant momentum initially due to the factors discussed above. In 2008, representatives of the banking sector began to complain about the perceived lack of regulation for M-Pesa. The CBK was requested to audit M-Pesa and determine its safety and soundness for the general public and whether it should be a regulated entity.

The conclusions of the audit included: 1) M-Pesa was not competing with traditional banks because users were accessing the service through a mobile channel, 2) M-Pesa did not accept funds from the public that were repayable on demand and should not be regulated as such, and 3) there was no credit risk for M-Pesa because agents pre-paid a float that was deposited with the banks. Because of the ongoing cooperation and regulatory measures taken by the CBK to support M-Pesa, it paved the way for clearing hurdles that could have crippled its launch and continued existence. Without this support, M-Pesa would have never existed, and it is likely the entire ecosystem would not be what it is today.

One source interviewed for this paper brought up the point that not only did M-Pesa launch the mobile ecosystem in Kenya, but it has also catalyzed an ecosystem for services that are built on top of other services that use M-Pesa. This concept will be discussed in the next section.

c. Empowering New Services for Kenyan Consumers

Some examples of this “clicks-to-bricks” phenomenon in Kenya, whereby the mobile platform enables physical services, includes payment integrations such as Kopo Kopo, mobile credit providers such as M-Peepa, water service companies such as Grundfos LifeLink, energy services firms such as M-Kopa Solar, and data services providers such as Ushahidi. We will profile some of these companies shortly, but the effect of the M-Pesa platform in launching new markets is significant. Now, users in urban and rural Kenya have access to physical products and services to which they did not previously have. These goods are not delivered through a mobile channel, but are enabled by having payments or data delivered through the mobile channel. This is a significant innovation in terms of addressing market infrastructure voids that exist in sub-Saharan Africa.

It is important to note that while most of the revenue models that were observed are subscription or percentage-of-transaction models -- very similar to Western models -- there are critical differences with respect to business models. In particular, the voids and differences in the Kenyan market have created business model innovations in distribution channels and delivery (discussed in this section), partnerships with a monopolistic partner (discussed later), and marketing through word-of-mouth (and not social media as is more common now in the West). (Companies were reluctant to discuss with us their marketing techniques for this paper.) There is still a lot of experimentation among businesses in this regard, but one of the keys to success in Kenya appears to be partnering with Safaricom or a similar large corporate to obtain the necessary reach and brand value.

Here are some profiles of companies leading this “clicks-to-bricks” phenomenon:

Box: Profiles of Leading Kenyan Companies

Kopo Kopo is a merchant payment platform started by three American expatriates now living in Kenya. The business started by giving merchants the tools to accept mobile payments and has expanded its offerings by providing analytics and marketing capabilities to its customers. Again, one key reason that M-Pesa was adopted so rapidly was due to the urban-to-rural remittances in Kenya. By unlocking the ability for merchants to accept mobile payments, Kopo Kopo enabled these funds to be used for purchases without using an M-Pesa agent to cash out. This made spending even easier for the consumer and improved the availability of goods and services.

M-Kopa Solar uses its proprietary financing platform to provide asset financing for homeowners to purchase solar power units. The solar power units are sold through a network of retail stores and are manufactured by d.light design (another expat-run business operating in Kenya). M-Kopa's innovation is the microfinance platform tied to a brick-and-mortar distribution network. Using its platform, M-Kopa is able to make near real-time credit decisions and pass this information on to the channel seamlessly.

Ushahidi develops software for information collection, visualization, and interactive mapping. The software was originally developed to map reports of violence in the post-election fallout of the disputed 2008 Kenyan presidential race. Using mobile software to collect and track data in this way was used to improve the transparency of government and has now been widely used in other countries and for other purposes. This example also demonstrates the view of Kenya as a lab for mobile technologies for the rest of the world which is an important investment hypothesis for many venture and impact investors.

d. Summary of the Kenyan Ecosystem

This section began by providing an overview of the Kenyan ecosystem and then moved to a description of the key factors behind the successful launch of M-Pesa. Some of the key themes that were discussed here include: 1) the collaboration between universities, accelerators, and investors in the Kenyan ecosystem, 2) the role of the Kenyan Government and Safaricom in ensuring that M-Pesa was able to achieve widespread adoption, and 3) how M-Pesa became not just a mobile platform, but one that promoted the creation of new companies that provide physical goods and services to Kenyan customers. Each of these pieces has been critical to the establishment of the mobile tech ecosystem in Kenya. Without the platform and the reach, these services would not have reached their present scale.

IV. GAPS AND AREAS FOR IMPROVEMENT IN THE KENYAN ECOSYSTEM

Now that we have framed the macroeconomic context and some of the key success factors for the Kenyan ecosystem, we turn our attention to some of the key gaps that could be potential threats to the continued development of the ecosystem. Nine key gaps will be discussed in this section which affect all layers of the ecosystem.

a. Gaps in Definition and Emphasis for Management Training

Based on our interviews with venture investors, accelerator managers, and local entrepreneurs, one of the most significant gaps often mentioned is the lack of management skills and training available for local entrepreneurs. However, in diving deeper to understand this gap, the genesis of it seems to be a gap in how management training is defined by expatriate investors and mentors as compared to local Kenyans. This gap in the definition has resulted in a gulf in expectations and prescribed remedies.

One accelerator manager spoke about his definition of entrepreneurial management:

The products that have had the most impact have been because the team that developed the product made a strong effort at pushing the product to those for whom the solution would have value. This is usually never a passive discovery process. It requires getting your hands dirty and getting out of the building.

An expatriate entrepreneur further clarified:

There is a lot of management training for early-stage [ventures] for getting the product to market, but not much for strategic planning...The emphasis is on building the prototype, but next steps are needed in terms of R&D, developing a revenue model, and marketing and sales strategy.

A venture capital firm in Kenya shared their perspective:

[The idea of entrepreneurship] is becoming new and trendy in Kenya among the younger generation. [The firm] has to look hard for talented entrepreneurs...Kenyans are not learning the skill of entrepreneurship.

These sources were all expatriates with experiences and education from outside Kenya. A local Kenyan accelerator shared its perspective:

[The accelerator is offering] training programs through partnerships with corporate organizations e.g. Microsoft to offer their professional skills and certifications...[The accelerator] has partnered with these large organizations to offer missing skills e.g. technical and project management training to the startups through their expertise and capacity.

To conclude, there is a perception among expatriate entrepreneurs, investors, and accelerator managers that the necessary components of entrepreneurial management skills include opportunity recognition, product design, organizational planning and leadership, customer discovery, marketing strategy, early-stage financing, partnership negotiations, and revenue model development. The gap exists as local Kenyan solutions to addressing these missing skills are to utilize training programs and certifications from larger organizations focusing narrowly on project management and technical product development. The purpose of these programs is to train engineering managers within large organizations to manage a product engineering process. Therefore, these training programs are not adequate for the needs of startups which face very different business challenges and require different skill sets.

b. Customer-Demanded Products vs. Untested Products

In speaking to accelerator managers, entrepreneurs, and a member of the Safaricom team that launched M-Pesa, we heard common themes on the success of customer-demanded products vs. untested products that are searching for a customer base. To define a customer-demanded product, these are products where an entrepreneur found a need or gap that existed in the market. They used observation and interviews to clearly understand the customer, their need, and possible solutions to the problem. Then, the entrepreneur built a minimum viable prototype to test their solution to the need. Eventually, the prototype would be built over several iterations to be a fully-working solution. An example of using this process is Eneza which identified an opportunity for leveraging mobile for education, particularly among rural users. Building out pilots helped the team to refine the product and develop a partnership with Safaricom by demonstrating the value that it offered to customers and their willingness to pay.

Conversely, other startups have been built around an untested product or idea without a clear market. Often, the team initially focuses on building a product before taking it to the public. Subsequently, the team tries to develop a market willing to purchase the product, followed by a distribution channel, the necessary partnerships, and a revenue model. Several of our interviewees pointed out that this process has experienced far less success in the Kenyan market than customer-demanded products.

This process dovetails with the discussion about the gaps in entrepreneurial experience and management training. It also points out a clear need for training programs similar to Berkeley-Haas' Lean LaunchPad which would provide Kenyan entrepreneurs with a product development process based on the "customer-demanded" perspective, likely improving the chances of success for Kenyan startups. Such a program would require the engagement of local mentors and/or experienced entrepreneurs and would be based on an experiential learning approach where students are guided through a process of iterating prototypes with

customer feedback. One accelerator manager stated his belief that the best way to learn entrepreneurial management skills is to “get out of the building”:

There is very little value in running training programs. It is a wasted resource training entrepreneurs this way because it distracts from building a company.

In the end, Kenya would be well served to observe best practices from companies that have achieved scale in the Kenyan market and incorporate entrepreneurship management training (as distinct from traditional business management) into its university and post-university curriculum. Although there is a shortage of mentors in Kenya, engaging with these mentors and creating a dialogue with them around the skills required specifically for entrepreneurs will only help to develop the necessary skills in Kenyan founders.

c. Gaps in Execution of Management Training

For those programs that run management training courses, some gaps were highlighted in the execution and performance of these courses. Here are some of the most significant issues that were discussed.

Entrepreneurs reported that although they were exposed to training programs in universities or as part of an accelerator, these programs often lacked follow up. Oftentimes, students would be taught in a classroom setting over a few months, but they would not get real time feedback on applying the training in practical settings. One accelerator manager noted that Kenyans have not been traditionally taught experientially, so real world learning is something that is uncomfortable for many of them.

For many accelerator programs that are not directly funding new companies, there is a strong emphasis on product development as opposed to business model development and entrepreneurial management. Pressure is placed on entrepreneurs to produce working prototypes for demo days. This is a common challenge that affects accelerators everywhere. In Kenya, because of the lack of entrepreneurial experience, this only amplifies the lack of management know-how.

Interviewees also noted that while there is a strong entrepreneurial culture in Nairobi, there are reports of a bias against non-technical personnel. Thus, many who do have the skills to fill the lack of business knowledge in the ecosystem do not feel comfortable engaging with technical founders in the common spaces around Nairobi.

d. Gaps in Investor Due Diligence Process and Follow-on Funding

One significant question that we had before writing this paper was how did venture investors complete due diligence on Kenyan companies. With the voids that exist (and have already been discussed) in distribution channels, IP protection, product

marketing as well as the gaps that have been pointed out in marketing strategy and entrepreneurial management, there are many questions that arise about how an investor can gain sufficient comfort with a business and a team to make an investment. Based on our interviews with the two most active early-stage investors 88 mph and Savannah Fund, their three-month incubation programs are critical to making investment decisions. Although 88 mph makes a small investment commitment upon acceptance to its accelerator, any larger investment decisions are made after viewing teams' process for building products, establishing product-market fit, and developing marketing strategies and revenue models, as well as the founders' openness to coaching. These observations provide the insights to make larger resource commitments.

Given the time this due diligence process takes, this severely limits the number of investments that an early- or seed-stage VC can make in Kenya. Also, because there are very few investors at this stage, this presents a significant bottleneck for future growth in the technology sector. For holding company-founded or expat-run teams that have access to their own networks of investors, this is not as critical of an issue. However, for local Kenyan entrepreneurs, there are very limited channels that exist at this point. The data seems to support this point. Per Appendix I, the Kenyan companies that are expat-run have raised \$29.9m vs. \$5.7m for local-run startups.

A further gap still for Kenyan startups is the linkage from seed funding to raising a larger follow-on round. This larger round typically requires demonstrating sufficient customer traction to prove product-market fit, and the funding is intended to be used for scaling up operations. Kenyan founders have had very little success to this point at raising follow-on funding. This would seem to point to the gaps in entrepreneurial management that were previously highlighted, including experience in marketing and sales strategy. This perspective was echoed by an accelerator manager:

There is a lack of entrepreneurs with good managerial skills...Tech-preneurs are very focused on the product, not on the business. [Entrepreneurs in Kenya] have seen success when companies are actively pushing the product into the market with a focused sales and marketing effort. This is beyond the average tech-preneur in Kenya.

Additionally, there seems to be a lack of late stage venture investors in Kenya (see Appendix I for further detail). There are other sources of funding at this later stage (holding companies and impact investors), but raising a follow-on round has proven to be a significant challenge for both expat- and locally-run companies.

One other funding source that is active in Kenya is impact investors. We have previously highlighted some of the active players in this class. One important point to note, however, is that the interests of impact and venture investors can diverge. One venture investor spoke about "too good to fail" investments. This refers to an investment whose story is too good for impact investors to pass on, even if it is

poorly run. These sorts of investments have a high potential for making a social impact and are critical to attracting limited partners for subsequent funds. In effect, general partners at impact investment firms want to be able to demonstrate successful investments in impact companies, particularly those that have received significant media attention. This allows the impact fund to point to specific, high-profile investments when they seek to raise subsequent funds. At the same time, these types of investments do not impose the discipline on management that a traditional for-profit investment would, and consequently, they can contribute to disappointing financial returns to limited partners. This divergence in goals can be potentially damaging overall for limited partner investments into for-profit venture funds. Jonathan Kalan wrote a piece in 2012 that characterized this gap between impact and venture investors²¹. This narrative does highlight that impact investors are even more susceptible than for-profit investors to the “too good to fail” phenomenon and makes them more susceptible to the gap in due diligence.

e. Gaps in Connection between Universities, Accelerators, and VC Firms

One of our initial hypotheses was around the strong connections between universities, accelerators, and the private sector (e.g. venture firms and corporations). One of the keys to the success of the Kenyan mobile ecosystem that we expected to find was a proactive push by university faculty and administration to encourage their most promising students to found startups. This process would include a smooth transition from the classroom to a spot in the prominent accelerators in Nairobi where this promising talent would be mentored in entrepreneurship and prepared for pitches to venture investors to facilitate raising capital.

The picture that emerged from our research and interviews was somewhat different – integration between universities and the business sector is still evolving, but several players in the ecosystem are working towards this vision. Several of the accelerators tout their partnerships with the top Kenyan ICT universities including iLab / @iBiz Africa (Strathmore), FabLab (University of Nairobi), and iHub/m:Lab/NaiLab (Strathmore). Additionally, the accelerators have corporate partners such as Intel/Microsoft/Google/Samsung (iHub), Google/Microsoft (88 mph), and Microsoft/Accenture (NaiLab) among others. As previously noted, 88 mph also makes investments into some of these companies, and iHub hosts Savannah Fund’s incubation program from which it makes some investments. Also, Pivot East is the largest mobile pitch competition in East Africa and is organized by m:Lab. This event attracts startups, investors, and corporate partners. Finally, several of the accelerators operate co-working spaces designed to promote the entrepreneurial and tech community in Nairobi and provide physical spaces for talent to come together.

This illustrates that several of the accelerators have gone to great lengths to create networks of universities, corporate partners, investors, and mentors. However, thus far we have seen very few startups originating in Kenyan universities that have

raised funding. None of the most recent 88 mph cohort companies (4 companies) were founded at a university and only SafariDesk among Savannah Fund's Kenyan portfolio companies (5 investments) was started while the founder was at a university. See Appendix III for profiles of some noted Kenyan startups, including details on their origins.

Given the effort put into building the accelerators to become the “connectors” for the entire ecosystem, there has been a surprising lack of results in terms of promoting student entrepreneurs through to several rounds of investor funding. Delving deeper into this gap, venture investors interviewed acknowledged that the lack of entrepreneurial management skills limited the number of investible early-stage companies in their pipeline. One investor noted that although considerable time is spent with the entrepreneurs during the incubation period, many startups get stuck at a stage where they cannot grow users beyond a small scale. This is primarily due to building a product without establishing whether there is a sufficient market. Thus, even for those startups that are able to raise a seed or Series A round, achieving sufficient traction to raise follow-on funding is a much greater challenge. This could account for why we are seeing very few native Kenyan-run startups attracting additional rounds of funding. Founders feel that there is not enough funding available in the market, and investors feel that there are not enough fundable companies with sufficient traction and management experience. This pattern is often observed in other developing countries. One accelerator manager explained:

We are not using our relationships with universities to source companies... Normal tech entrepreneurs are in their early 30s with work experience. “Wonderkids” are not the norm. We have to be realistic where get entrepreneurs from.

This obviously begs the question about where to find skilled entrepreneurial management talent. This continues to be a challenge that many of the interviewees noted. Many of the younger generation of founders do not have the necessary experience or business acumen upon completing university studies. Hence, continuing practical training in entrepreneurship and general business skills is required after graduation.

Another option for filling the management skills gap with local Kenyans is to engage mid-career professional managers with business management experience. The issue here is that professionals at this stage have little incentive to start new ventures. Many are happy to engage as mentors, but few are willing to leave their careers with larger companies to lead startup teams. Therefore, although technology platforms and opportunities exist, few experienced professionals are willing to fill this role as payoffs and exits have yet to be demonstrated in Kenya. This brings up another issue in Kenya, the lack of exit opportunities for investors.

f. Gaps in Exit Opportunities and the Sustainability of the VC Industry in Kenya

In many developing countries, the lack of viable “exits” inhibits the continued growth of entrepreneurial ecosystems. Exits typically occur through corporate acquisitions or through initial public offerings (IPOs).

In recent years, Safaricom has acquired very few companies – these few acquisitions include data operators IGO Wireless and Instaconnect. Because of its market share, Safaricom has come under regulatory scrutiny for antitrust issues which has caused it to back out of the acquisitions of yuMobile and Seven Seas Technologies. Other multinationals have been slow to acquire Kenyan startups, particularly those whose technologies have not been proven in the market. Many of the Kenyan startups that have been discussed have yet to reach scale in the market and are too early to be acquired by large Kenyan corporations or multinationals. The question remains however, if any reach this stage of development, would one of these corporations acquire the Kenyan startup?

Kenya has a stock exchange but relatively few companies are listed, and there is a very limited track record of successful technology company IPOs. It is not clear if a Kenyan startup can realistically reach a scale that would allow it to exit via an IPO.

Because of this limited market for exits, there are questions about viability of non-impact investment funds. For purely for-profit investors, can sufficient returns be generated? Given the challenges around attracting talent, developing markets, and finding suitable exit opportunities, there still exists the possibility that investors may struggle initially and abandon the market when returns do not materialize within 5-10 years.

g. Gaps in Partnerships with Mobile Operators and Other Major Corporations

As discussed already, Safaricom’s presence in the market looms large, both as the largest player by market share in the carrier market and as the developer and manager of M-Pesa. Entrepreneurs report that it is not difficult to start discussions with Safaricom. However, the organization is large and bureaucratic. As a consequence, a report by the GSMA and iHub entitled “*Digital Entrepreneurship in Kenya 2014.*”²² notes that only 11% of Kenyan startups have partnerships with mobile operators.

Another aspect for this low number of partnerships may also tie back to the lack of management and business experience among founding teams. Entrepreneurs need to be clear about their value proposition to Safaricom or other large multinationals. Are these startups able to provide 1) innovation to which larger companies do not have access?, 2) access to talent which larger corporations are not able to obtain themselves?, or 3) access to local markets that multinationals are not able to access themselves? The key to forming more of these relationships is creating enough value for partners to see the need to form partnerships. In exchange, large

corporations are able to provide startups with 1) product development expertise, 2) access to platforms, or 3) market reach (either inside Kenya for Safaricom or outside Kenya for multinational partners). Finding ways to equally trade value will lead to more and better partnerships.

As the majority of mobile-enabled businesses will have a go-to market strategy in Kenya involving Safaricom, partnering is absolutely critical in terms of market reach. Once product-market fit has been established, creating word-of-mouth is critical to success in the Kenyan market. Having users and data demonstrating the value of the solution and the extent of market acceptance has been critical in partnering with Safaricom. There have been concerns voiced about allowing Safaricom to get too close to a startup's technology such that the carrier could copy significant pieces of it. However, based on our interviews, typically startups have been able to out-innovate Safaricom and provide it with access to technologies to which it cannot create fast enough.

h. Gaps in Media Perception and Reality and Need for Better Ecosystem Coordination

Some great insights were also provided by our interviewees on the hype that surrounds Kenyan mobile startups. The most popular narrative is that the Kenyan ecosystem, powered by the innovative M-Pesa platform, is a laboratory for the world, and especially the developing world: demonstrating how new mobile technologies for emerging markets can be “game changers” for citizens in these markets. This narrative has attracted significant investments in the form of venture capital, impact investment, holding companies, and large corporate R&D labs (such as Microsoft and IBM which both have facilities in Kenya). This narrative leverages the impact investment thesis of financial inclusion and takes the insight previously discussed on mobile platforms enabling new products and services to be delivered to users that previously did not have access.

At another level, a venture investor was much more cynical, repeating the “too good to fail” these and stating,

[There is] too much money chasing around too few deals. Investors are not close enough on the ground...It is the same ten startups that everyone is talking about...[The venture firm] cannot find enough investments and those [that are suitable] are mostly expat run.

A subject matter expert on ICT ecosystem formation for the World Bank discussed a typical pattern that he has seen and which is playing out in Kenya. He noted that the vibrant NGO community in Nairobi has been attracting international attention. This stems from the government signaling the importance of ICT through specific initiatives such as its support of M-Pesa, government partnerships with local accelerators²³, and its investment in The East African Marine System underwater fiber optic cable to bring high-speed internet access to the country²⁴. This signaling

first attracts local investors, and then usually large NGOs or institutions such as the World Bank follow. International investors soon follow these organizations as a critical signal has been created. Hence, the pattern is normally for government to act first, followed by local investors, then international institutions, and finally international investors. This chain of signals and commitments reduces the perception of risk.

However, the subject matter expert noted that these ecosystems often suffer from coordination failures: many of the actors operate in isolation and common challenges are not addressed. The key questions are: who manages the “commons” and what governance structures can improve coordination and strategic planning? Improved governance can help address many of the gaps discussed in this section although it is not immediately obvious who is responsible for addressing these gaps. For example, upgrading entrepreneurial management training could be the responsibility of universities, accelerators, or mentors. Likewise, how do venture and impact investors better align their incentives? Without clear lines of responsibility and coordination to develop the ecosystem, little action tends to be taken to address the gaps, and the ecosystem stagnates. Many technology clusters in developing countries face similar challenges related to governance.

While the creation of media attention is a great development for the local ecosystem in terms of attracting capital and providing encouragement for would-be entrepreneurs, it is important to put this hype into the proper perspective. As noted, the influx of capital should not be a replacement for managerial discipline. The focus on impactful outcomes should not be a reason to ignore the development of sound entrepreneurial management practices and financially sustainable business models. And more broadly, the media hype needs to be supported by strategic planning initiatives and coordination of the different ecosystem participants to ensure that key gaps can be addressed.

i. Potential for Corruption and Lack of Intellectual Property Protection

As previously noted, corruption is quite high in Kenya. Additionally, intellectual property laws are not well developed for software, so there are fewer protections for tech entrepreneurs than in more advanced markets. In speaking to one investor, “this does not stop entrepreneurs from starting companies.” Another accelerator felt that with more solid legislation, the big players would actually have an advantage in finding ways around the laws which would give smaller startups a false sense of security. The accelerator manager also noted that the culture in general does not emphasize business ethics, so stealing ideas is not uncommon. Because these issues pervade not just the legal system, but business ethics in general, this creates frictions within the business environment that detract from a fully-formed ecosystem.

V. CONCLUSION

We will conclude this paper by summarizing some of the critical strengths, weaknesses, opportunities, and threats to the Kenyan mobile tech ecosystem that have been identified and discussed in this paper.

a. Strengths

Perhaps the most significant factor in the development of the Kenyan technology and mobile ecosystem was the development of the mobile payment platform M-Pesa. The launch of this platform was successful for a number of macro factors including the market share of the largest mobile carrier Safaricom and the cooperation of the Kenyan Government in launching M-Pesa as a means of increasing financial inclusion. The buy-in and support of the Government has been invaluable in sustaining the platform which, in recent years, has seen more applications built on top of it, further expanding the ecosystem. Lastly, the entrepreneurial culture in Nairobi is fed by many of the market participants themselves: entrepreneurs, expats, accelerators, and investors. This has made tech entrepreneurship a viable career choice in Kenya and continues to stimulate innovation in the country.

b. Weaknesses

Probably the most glaring theme that was heard several times during interviews was the lack of consensus on the managerial skills that entrepreneurs require. Much of the training offered appears focused on project management within large-scale enterprises and does not address the skill gaps of many entrepreneurs in the ecosystem, specifically marketing strategy, revenue model development, and customer development. Many of the gaps in capturing larger markets and receiving follow-on funding appear to be attributable to this learning gap.

The variety of different investor classes, each with their own goals, was discussed earlier. Because there is sometimes a divergence in goals, there can be a breakdown in managerial discipline being applied to companies receiving funds from different classes of investors. Some investors cited this as a source of frustration in our interviews.

Finally, there are very few early-stage and later-stage venture investors in the Kenyan ecosystem. Early-stage investors are important for the ecosystem because they help to identify promising entrepreneurs and startups, provide them with initial seed capital, and channel resources towards these companies. Later-stage companies bring additional growth capital and business expertise to the table. Without these investors, a significant gap in the ecosystem forms.

Finally, we have discussed the lack of viable exits for startup companies in Kenya, including strategic acquisitions and IPOs. This challenge is observed throughout developing countries, and reduces incentives for new venture formation.

c. Opportunities and Threats: Future Issues and Recommendations

The two most significant threats to the ecosystem that were identified are the financial sustainability of venture firms and accelerators and the potential for coordination failures.

Because of the limited opportunities for exits in Kenya, it is extremely uncertain whether venture investors will consistently deliver financial returns to their limited partners going forward. This gap threatens the ongoing viability of financial investors in Kenya and could lead to investor abandonment in the future which could create a significant gap in the Kenyan ecosystem.

Another significant concern is that many of the gaps that have been identified do not fall under the purview of any specific member of the ecosystem. Without coordination, there is little incentive for players to assume these responsibilities. Therefore, many of the gaps identified could continue to persist into the future without further action. This could lead to the Kenyan ecosystem to stagnate in its growth.

First, by developing common priorities and more effective programs for entrepreneurial training, the success rate for new startups (and their investors) can be significantly improved. For example, Berkeley-Haas' I-Corps entrepreneurship training program, financed by the National Science Foundation (NSF), has led to a dramatic increase in success rate for startup funding²⁵. While the baseline funding rate for NSF teams that have not participated in I-Corps is 18%, I-Corps graduates have a 60% funding rate. Similarly, the implementation of new entrepreneurial training approaches in Kenya can have a significant impact on the growth of the ecosystem, leading to more successful companies being formed and attracting more investors and capital to the country.

Second, the Kenyan tech-mobile ecosystem requires improved "governance": mechanisms for ongoing strategic planning and coordination to better manage the "commons." Improved governance is required to address some of the key systemic gaps discussed in this paper, including training, the investment chain (from startup funding to exits), partnership development, and legal/regulatory issues. Furthermore, coordination is required to improve the linkages between key players in the ecosystem such as universities, accelerators, VC firms, and corporations.

In effect, governance is a key challenge for many technology clusters in developing countries. The most successful technology ecosystems have developed governance structures that promote coordination between the private sector, universities / academia, and non-profits. Governance models vary depending on the local context.

In some regions, the government plays a more central role (e.g. Singapore). In other regions, the private sector or universities are more prominent (e.g. the Silicon Valley, Israel, or the Digital Port Technology cluster in Brazil)²⁶.

The Kenyan technology/ mobile ecosystem remains a remarkable success story in Africa. Its continued growth and development will hinge on initiatives to promote better governance and address the key structural gaps discussed in this paper. Better training and governance will accelerate the development of the ecosystem and help fulfill the promise that many believe the ecosystem in Kenya holds.

APPENDIX I

Kenyan Mobile Startups Raising Venture Funding

Company	Amt (in 000s)	Year	Investors
Kopo Kopo	\$856	2011	Accion
SafariDesk	\$25	2012	Savannah Fund
PayGate		2012	AMVF
Kopo Kopo	\$2,800	2013	Accion, Khosla
eleni	\$5,000	2013	Morgan Stanley, IFC
Walusimbi	\$1,400	2013	Angel investors
M-Farm	\$235	2013	Safaricom
SleepOut	\$200	2013	AMVF
Mdundo	\$125	2013	88 mph, angel investors
Zatiti	\$25	2013	Savannah Fund
Eneza	\$200	2013	Savannah Fund
Websimba	\$200	2013	AMVF
Jooist	\$20	2013	AMVF
Bridge Int'l	\$6,000	2014	Commonwealth Development Corporation
M-Kopa	\$20,000	2014	Commercial Bank of Africa
Total	\$37,086		

These are the fundings for investments in locally-headquartered internet or mobile startups from the respective countries according to Crunchbase. This does not include holding company-incubated / funded companies which are shown in Appendix II.

APPENDIX II

Holding Company-backed Startups

Company	Amt (in 000s)	Year
Wananchi (Zuku)	\$18,840	2010
One Africa Media	\$20,000	2013

This list should not be considered exhaustive. These are the two predominant holding companies that are active in Kenya, but these fundings are not always publicly-disclosed, so the activity and dollar amounts are difficult to obtain from publicly-available information.

APPENDIX III

Case Studies of the Origin and Development of Kenyan Startups

Below, we present descriptions of Kenyan startups and trace their backgrounds, highlighting themes addressed in the paper.

University Startups

The first group of Kenyan startups to be discussed here are those that were in some way connected to or had their origins through the universities in Kenya.

SafariDesk is a premier travel marketplace that was launched in 2011 by Irvine Ndwiga and Paul Hunkin. Mr. Ndwiga had just completed his bachelor of Commerce at Curtin University in Perth, Australia earlier in 2011. Mr. Hunkin completed his PhD in Computer Science in New Zealand in 2012 and met Mr. Ndwiga while traveling in Kenya soon after both had finished their studies. SafariDesk was accepted into Savannah Fund's accelerator in 2012 and received funding upon completion.

CardPlanet provides several solutions for distributing SMS-based vouchers to various markets. The company was started in 2011 by Rodgers Muhadi and Samuel Masinde. Mr. Muhadi graduated from Egerton University in 2012 with a degree in Electronics Engineering. Mr. Masinde graduated from Egerton University in 2011 with a degree in Computer Science. Two founders likely met at Egerton and started the company while Mr. Muhadi was completing his degree. They participated in the Savannah Fund accelerator in late 2013 and received funding upon completion of the program.

VC or Holding Company-Incubated

Wananchi is the leading provider of home internet and pay TV in East Africa through its flagship brand, Zuku. It was started in 2008 with funding from East Africa Capital Partners (EACP), and its first CEO was Richard Bell, a British National who has been active in the development of ICT in Kenya and is the CEO of EACP. Mr. Bell has since stepped down as CEO of Wananchi Group, but he continues to be involved in Wananchi as a board member. Wananchi has raised further venture and private equity capital and expanded its business geographically and vertically since 2008, including Pay TV and broadband for residential and corporate consumers as well as producing its own television content.

M-Kopa Solar provides affordable solar power units for off-the-grid users with financing through mobile credit. The company was founded in 2010 by Nick Hughes and Jesse Moore. Hughes is a Partner in Signal Point, a UK-based advisory firm that has launched two mobile commerce businesses in emerging markets (the other is

MeraDoctor in India). Hughes also led the team that developed M-Pesa at Vodafone from 2004-2009. M-Kopa has received a \$10m loan from the Commercial Bank of Africa as well as equity financing from the Gates Foundation, the Shell Foundation, the Department for International Development, and GrayGhost Ventures.

Mdundo is a mobile music distribution platform. It was started in August 2012 through 88 mph. The founding team consisted of 2 Europeans and 2 Kenyans. The initial idea was based on a market test for selling music on scratch cards conducted by 88 mph. This trial proved successful, and the accelerator formed a team to execute the idea. None of the team has a technical background, and they have leveraged the technical talent at 88 mph. Mdundo received follow-on funding, in addition to the initial funding from 88 mph from local and international angel investors and has raised a total of \$150,000.

Accelerator / Local Entrepreneurs

Ushahidi is a non-profit software company that started in 2008 by several volunteer bloggers and software developers living in Kenya (three native Kenyans and one American expatriate). It develops software for information collection, visualization, and interactive mapping. These tools are specifically for improving democracy and increasing transparency. The software has become an important platform for social activism and crowdsourced citizen journalism. The platform has gone on to be used in South Africa, Congo, Uganda, the Gaza Strip, Mexico, Haiti, and Chile among other countries.

Zatiti is a Nairobi-based business that helps merchants design and launch e-Commerce websites with integration for M-Pesa payments. The company was founded in October 2012 as Gereji Limited by David Njuguna and Grace Kiburi. Mr. Njuguna graduated from Egerton University in 2003 with a degree in Computer Science and worked as a web developer for several years prior to founding Zatiti. Ms. Kiburi graduated from Jomo Kenyatta University in 2008 and worked in IT up until the founding of company. Although information about how the team initially began working together is not available to the authors, the team applied for admission to the Savannah Fund's three month accelerator in 2013 and was accepted. This culminated in Zatiti receiving funding from Savannah Fund in August 2013 at the completion of the accelerator program.

M-Pepea provides emergency loans via requests from a borrower's mobile phone. The company was started in 2010 by Daniel Munga and Edwin Maina as part of Raven Limited. Raven Limited appears to be a holding company for several entrepreneurial ventures initiated by Mr. Munga. Mr. Munga graduated from the University of Nairobi in 2005 with a MSc in Information Systems. Mr. Maina graduated from the US International University in 2009 with a BSc in International Business. M-Pepea was part of 88 mph's 2012 class in Nairobi. Once the venture had been accepted to 88 mph, it was able to secure funding upon completion of the accelerator program.

Sleep Out is an e-Commerce booking service for travelers. It was founded in 2011 by Johann Jenson, a Canadian hospitality marketer, and Mikul Shah, a Kenyan tech entrepreneur. Mr. Shah received a degree in Computer Systems Engineering from the University of Manchester in 2000 and had previously been Chief Marketing Officer for a startup in the UK before returning to Kenya and starting another company called EatOut. He was mentoring at 88 mph at the time that he met Mr. Jenson and started Sleep Out. In May 2013, the company received funding from Dutch venture capital firm Africa Media Ventures Fund (AMVF).

Jooist is a social mobile gaming platform for feature phones. The company was founded in 2012 by four local Kenyans, Waliaula Makokha, Brian Obara, and Jude Okello. Mr. Makokha holds a degree in Computer Science from the University of London (2010), Mr. Obara holds a degree in Computer Science from William Paterson University (2007), and Mr. Okello holds a degree in Computer Science from Jomo Kenyatta University (2007). Jooist was incubated through GrowthHub in late 2012 before winning the SeedStars startup competition in 2013. They are backed by Africa Media Venture Fund (AMVF).

Expat Entrepreneurs

Kopo Kopo is a mobile payment solution for merchants in Africa. It was founded in 2010 by Dylan Higgins and Tom Bostelmann. They had previously started a non-profit, SaveTogether.org, in the United States. Mr. Higgins has a consulting and law background. Mr. Bostelmann has a technical background as a software developer. Kopo Kopo has attracted funding from both for-profit (Javelin) and impact investors (Khosla Impact, Accion). Until recently, Mr. Higgins, the CEO, was based in the United States. He now resides in Nairobi.

Brck is a hardware startup that provides a robust connectivity device that is designed to provide users with Internet access in the harshest environments. It was founded by Erik Hersman in 2013. Hersman was previously one of the founders of Ushahidi and iHub. Brck's board members include other members of the Ushahidi founding team, and the company is located at iHub. Hersman has a marketing and strategy background with a degree from Florida State University. Hersman was raised in Kenya and returned in 2006.

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