

# The Challenge of Sustaining App Entrepreneurs

While on one of the earliest trips I made in my role as the managing director of the Mobile for Development Department within GSMA, I found myself in a busy market on the outskirts of Nairobi, weaving my way through a maze of stalls to the buildings beyond. I was honing in on those painted “Safaricom green”—not a hard task, as it sometimes seems as if every other building in rural Kenya is painted this color—and was enjoying spending the day talking to users and agents of mobile money services.<sup>1</sup>

Nestled amidst the market stalls I found a pharmacy painted the ubiquitous Safaricom green, so I went in to meet the owner and rattle off my usual list of questions. The pharmacy was as expected—rows of medicines, an assistant in a reassuring white lab coat. However, perched at the edge of the counter was a huge ledger used to record M-PESA transactions, and on the walls a smattering of posters advertised M-PESA services, explaining the charges and noting the M-PESA agent’s number. I questioned the pharmacist: How long had he been running an M-PESA agency within his shop? About a year. Was he happy with it? Yes, very happy. Was it providing a good side income to his pharmacy? Yes, but more than that. What did he mean? He earned more from being an M-PESA agent than he did from the pharmacy. Really? How long did it take for this to happen? About three months.

Three months! Within three months the revenue from being an M-PESA agent had outstripped that of running the pharmacy, which probably had taken the man years to train for and to build up a business. What this man now was running was, effectively, a phone-enabled bank in the same building as his less profitable phar-

---

*Chris Locke is Managing Director of the GSMA Mobile for Development Department. The Mobile for Development Department works with the mobile industry globally to build services that have a development impact for the poorest people in the world. Chris has spent the past 15 years working in the mobile and internet industries, for companies such as the Virgin Group, Three, AOL, and T-Mobile. Previous to his career in industry, he was the Xerox Lecturer in Electronic Communication and Publishing at University College London, and he has maintained strong links to the research community, including being the editor of *Thumbculture: The Meaning of Mobile Phones in Society*, an anthology of research on the global social impact of mobile technology.*

maceutical business. I asked him how the M-PESA business had become so successful so fast, and he gestured outside. I turned to look, and saw again the market stalls I had picked my way through. Most of the traders likely were his customers, people who used him as a kind of small-business bank to manage float, pay suppliers, deposit earnings, etc. The pharmacy was a secure building built to protect the valuable medicines kept within it, but it now also protected the earnings of the market stall traders outside. It was convenient to use the building as an ersatz bank: drop a phone in the secure building, place a ledger on the desk, register as an M-PESA agent, and bingo—you've just become a small bank.

#### AFRICA: THE WORLD'S FASTEST GROWING MOBILE MARKET

Apart from allowing me to indulge in some travel writing, there's a specific reason I'm leading off with this anecdote. What that pharmacy in Nairobi represents to me is something that I think is a specific trope of mobile entrepreneurship in developing countries—the synergistic business, or the business within a business, where the use of an existing host business or service allows a new form of digital business to emerge and become sustainable. I think we need to understand how this particular model works if we are to fully understand how sustainability is to be achieved in developing markets.

We talk of Africa in particular as a technological tabula rasa, a geography devoid of infrastructure that, while posing a tragic problem in itself, offers the opportunity for innovative solutions. Much has been made of the leapfrog characteristic of the development of mobile telephony in Africa; how, unencumbered by a physical landline infrastructure, the continent has been allowed to move directly into a 21<sup>st</sup>-century wireless network culture. This is true, and I think we should be quite optimistic about it.

The rate of mobile telephony development in Africa is phenomenal. In 2011, the GSMA published its African Mobile Observatory, which indicated growth of 30 percent each year, with connections in the region expected to reach 735 million by the end of 2012.<sup>2</sup> This makes it the fastest growing region in the world in terms of mobile. The appetite for mobile services doesn't appear to be slowing, and as cheaper smartphones such as the IDEOS start to take hold in African countries, the continent will start to move beyond voice services to more sophisticated SMS and data services. The GSMA report indicates that non-voice services already represent 26 percent of total revenues in Kenya, which is head-and-shoulders above many other countries in the adoption of these services.

Innovation, however, has not been waiting for digital services to become available. What has always struck me about innovation in Africa's mobile sector is that a new layer of digital innovation is floating above the topography of the economy, culture, and society—not in the way ecommerce has slowly denuded high streets of all but charity shops and betting venues in the UK but in how mobile innovation is being woven into the physical world, dependent on its host. This is the kind of synergistic innovation that I think characterizes mobile entrepreneurship in

Africa: it is building on existing businesses and infrastructure, augmenting them rather than replacing them.

This struck me initially in 2005, when I was editing a book on the global social impact of mobile. In an excellent chapter by Jonathan Donner, one of the pioneering academics in this area, he described how he had seen small business owners in Rwanda use mobile phones to manage their small businesses.<sup>3</sup> He noted how café owners, hairdressers, and many other small businesses were using the most cheaply (or freely) available mobile services to improve their business efficiency. A café owner, for example, encouraged customers to give him a certain number of rings to indicate they would be in for lunch. This is not a separate industry emerging and existing in isolation, but something that is always connected as it forms new paths between existing businesses and customers. It is not replacing old systems but renewing, improving reach, reducing costs, and improving efficiency.

To my mind, this is real innovation, not technology-led innovation whereby top-down improvements in the features or functionality of a platform enable new business processes to emerge. It is more akin to a process of bricolage, in which the most is made of the limited materials available from the bottom up, thereby allowing innovative and creative uses of technology to emerge. The mobile phone—a device, we may need to be reminded, produced primarily for one simple function, to conduct phone conversations—is now being used in many innovative ways. It is a device that people can make their own, that they can bend to their own needs and purpose. The best and most innovative uses of the mobile phone are those that treat it as a resource as much as a product in itself, and then mine this resource for all its capabilities.

#### THE EMERGING ECONOMICS OF APP DEVELOPMENT IN AFRICA

The impending mobile digital revolution in developing markets often is discussed in terms of the degree of the explosion in market app development. A fantastic and laudable amount of effort has been put into developing a mobile app ecosystem in Africa that has driven some real success.

The work of InfoDev within the World Bank group is a particular case in point.<sup>4</sup> For many years they have been pioneers in supporting the training and mentoring of app developers in emerging markets. By developing these training programs, they are bringing much-needed digital skills and entrepreneurship training to emerging markets. There also are countless competitions for app developers in emerging markets, many with a social agenda, which offer incentives for developers to train on mobile platforms. This is creating a buzz, as a new generation of mobile entrepreneurs emerges that is familiar with mobile as a platform and has the support to develop the necessary skills. However, the question remains as to how sustainable the app economy will be, and whether it will produce sufficient revenue in emerging markets to support this new generation of entrepreneurs.

Research by Vision Mobile provides what is likely the clearest breakdown of the profitability of app developers.<sup>5</sup> The economics of trading in the virtual world

of app stores is brutal—Vision Mobile’s research shows that up to one-third of developers live below the “app poverty line”—a particularly vicious application of Pareto’s principle in which the limited opportunity for exposure to an audience creates a fierce separation between the most successful apps and what Chris Anderson calls the “long tail.”<sup>6</sup> Contrary to Anderson’s long-tail thesis, there is little sustainability in this long tail of app development, which produces barely enough revenue to sustain the effort needed to create an app and then to maintain it.

---

## Simple tools and free software can unlock the creative potential of many budding entrepreneurs and support them in the creation of new businesses.

---

Anecdotal evidence from developers has shown that, for an app to sustain two people working full time, it must maintain a position within the top 250 paid apps.<sup>7</sup> Moreover, sustaining an app in the market requires much more than developing it, launching it, and sitting back while it brings in the money. It requires, rather, investment in constant development,

upgrades, and new features. App stores are fiercely competitive and fast moving, and offering new features is essential to keeping an app buoyant in terms of ratings, reviews, and placement on the charts. There currently are more than 400,000 apps available from the Android app store, which means that a lot of developers are not covering even their basic costs.

Xyologic tracks stats for a range of markets globally and shows the trends in app-store downloads and economics.<sup>8</sup> Its research shows conclusively that, even if a developer manages to beat the brutal “discoverability” issues, as most apps simply go undiscovered by the consumer, the path to producing revenue isn’t an easy one. In its October 2011 research on the U.S. market, Xyologic showed that only 1 percent of Android app downloads are in the “paid” category. The picture is better for the iPhone (20 percent) and better still for the iPad (27 percent), but as Android is most likely to be the dominant smartphone platform for developing markets, this does not bode well for the sustainability of an emergent app-developer ecosystem in the region. And remember—that 1 percent of paid apps on Android is based on the U.S. market, where purchasing apps via credit cards is a well-developed consumer behavior. In emerging markets with little to no credit card penetration, 95 percent or more of users are on pay-as-you-go systems, and with the smaller amount of disposable income in these markets, the paid apps percentage can be expected to be even less.

This is not to say there will not be an explosion of digital creativity and innovation around apps in developing countries. It’s hugely encouraging to see that one of the winners of the Pivot East (a Nairobi-based competition to fund early-stage app developers) was Ma3racer, a game based on racing *matatus*, the informal buses

found all over Kenya. It is great to see a game developed for one of these competitions, as games at the moment are still the most sustainable form of mobile app. I've always rather glibly stated that I'd consider it a success if the next Angry Birds was written in Kampala or Nairobi or Lagos. This is because I really believe that, by supporting nascent mobile digital innovation and entrepreneurs, we are building a more relevant and beneficial industry for developing countries.

The information and communication technologies industry can offer more than cheap off-shore coding or business process work. Simple tools and free software can unlock the creative potential of many budding entrepreneurs and support them in the creation of new businesses that, if successful, can have a trickle-down effect and inspire or even directly employ more innovators and entrepreneurs. We need to help a thousand flowers bloom and support islands of innovators who can grow and proliferate like the rhizomatic growth of the mobile networks themselves, rather than creating the massive coding farms that have previously characterized the information and communication technologies industries in developing markets. Yet again, we can leapfrog this stage.

My concern, however, is that app store economics alone haven't got enough revenue potential to sustain this market for long. Some early successes are needed to prove what's possible (the function Angry Birds served in developed markets), but it will be damaging if the seductive promise of this early success isn't followed up by a market that can sustain the many, not just the few. What will happen when the app competition prize money dries up, as has occurred with many past development projects? How will the pioneering app developers in emerging markets sustain themselves if, as Vision Mobile's research shows us, only a select few app developers in more mature markets are managing to live above the app poverty line? Perhaps the answer is in looking beyond the walled garden of app store economics and seeing how different models of mobile innovation can support sustainable entrepreneurs.

#### ACHIEVING SUSTAINABILITY BY BEING SYNERGISTIC

Mobile technology at its most simplistic level provides the opportunity to connect. If users do not allow themselves to be seduced by the shiny world within the screen of a brand new smartphone, they will find a nondigital world that the device can harness and interact with. Some of the most innovative mobile services users have seen in emerging markets in the past few years have not been apps but services that integrate with and augment the world around them—and not in a way that augments reality but one that *connects* reality.

M-Kopa is an innovative service that embeds mobile seamlessly in a non-phone device and uses many of the business innovations driven by the mobile industry to deliver its service.<sup>9</sup> For example, M-Kopa offers customers a home solar power system for lighting and charging devices that has a 2G chipset from a simple mobile phone embedded in it. By sending small amounts of money to the M-PESA account in the solar system, customers can afford to access cheap, clean elec-

tricity in their homes on a pay-as-you-go basis. This is a nested innovation, a product that requires not just the physical network but a lot of the existing mobile infrastructure to succeed, for this product builds on the success of M-PESA. It also replicates the success of the agent network mobile operators have built to sell air time, and uses this model to sell and maintain payments for its solar energy products. It is not just mobile technology that is enabling this business but mobile industry innovations around marketing, distribution, customer management, and payment processing. Mobile is not a “dumb bearer” network for M-Kopa but the very supporting architecture that allows it to thrive and survive.

Grundfos Lifelink provides a similar service for water supply.<sup>10</sup> Again, by using the existing infrastructure of the mobile network and building on the “rails” of M-PESA, this service provides a scalable, sustainable model for providing access to water for rural populations.

Tienda Tek by Frogtek is another service that uses mobile technology to provide simple tools to support small businesses.<sup>11</sup> Like an updated version of the basic use of phones Jonathon Donner noted in Rwanda, Tienda Tek uses more sophisticated mobile devices to bring smartcode-based stock control and management to microretailers in Latin America.

The M-PESA agency within a pharmacy, the solar energy business that uses mobile technology and distribution networks, the water service doing the same—all these are examples of a “Russian doll” mentality of building new innovative businesses within existing businesses.

- 
1. M-PESA needs no introduction, as it is almost a cliché to discuss it in a paper on information and communication technologies or mobile for development. However, if you have picked up this copy of *Innovations* without knowing about it, then I can tell you in a nutshell that M-PESA is an SMS-based mobile payment revolution in Kenya used by over 70 percent of the population to make more than a billion transactions a month. For a great history of M-PESA's use and social impact, I suggest that you download the ebook by Nicholas Sullivan and Tonny Omwansa, *Money Real Quick*, Guardian Books, 2012.
  2. African Mobile Observatory 2011, GSMA, 2012. Available at <http://www.gsma.com/publicpolicy/wp-content/uploads/2012/04/africamobileobservatory2011-1.pdf>.
  3. Jonathan Donner, “The Social and Economic Implications of Mobile Telephony in Rwanda: An Ownership/Access Typology,” in *Thumb Culture: The Meaning of Mobile Phones for Society*, ed. P. Glotz, S. Bertschi, and C. Locke. Bielefeld, Germany: Transcript Verlag, 2005, pp. 37-52. Available at <http://www.transcript-verlag.de/ts403/ts403.php>.
  4. See <http://www.infodev.org/en/index.html>.
  5. Developer Economics 2012, Vision Mobile, 2012. Available at <http://www.visionmobile.com/product/developer-economics-2012/>.
  6. Chris Anderson, *The Long Tail: Why the Future of Business Is Selling Less of More*. Hyperion, 2006. Available at <http://www.amazon.com/The-Long-Tail-Business-Selling/dp/1401302378>.
  7. See <http://appcubby.com/blog/the-sparrow-problem/>.
  8. See <http://xyologic.com/app-downloads-reports>.
  9. See <http://www.m-kopa.com/>.
  10. See <http://www.grundfoslifelink.com/index.html>.
  11. See <http://frogtek.org/products/>.