



Digital Economies In Emerging Markets

Vital Wave & Caribou Digital

Introduction

If Charles Dickens were a technologist writing in the 21st century, he might write a tale of two digital cities: one that is a marvel of modern communication, data and information; the other a traditional, slow-paced, fragmented bureaucracy.

He might model the first city on Nairobi, Kenya, drawing a vivid picture of an ambitious young programmer, working after hours to perfect an app that allows the millions of new smartphone owners in his country to crowd-fund funerals in a society with over 70% mobile penetration. Then he would jump to Ethiopia, with less than 30% mobile access, to introduce a dour member of the regulatory commission who believes all these modern, noise-making machines only prevent people from talking to each other, and they are changing for the worse the people and culture he loves.

Dickens' genius was that he created memorable characters and put them in a time and place that captured (and satirized) a rapidly industrializing world. Were he alive today, he could not help but comment on the digital age, one in which the promise of digital technology is creating vibrant new digital economies in some countries yet withering on the vine in others.

In April 2014 we were fortunate to be extended the opportunity by the EmPac Centre at University of California, San Diego to host a one-day symposium on Digital Economies. We hosted a round table of world-leading experts from the industry and non-profit space, and discussed a wide range of issues about the opportunities of, and barriers to building digital economies in emerging markets.

This paper explores the concept of a Digital Economy – perhaps not with the wit or poetry of Charles Dickens - but with the aim of sharing valuable insights and spurring discussion and action. The paper discusses the barriers, and presents the benefits and opportunities of a Digital Economy. Chief among the benefits are higher employment, better incomes, and greater entrepreneurship. The paper concludes guidance and questions for governments, corporations, and local business leaders on how to foster a Digital Economy.

We would like to thank the faculty at the EmPac Centre at UCSD and all those who participated in the roundtable. We hope this paper acts as a good synthesis of the conversation.

Section 1 - Digital Economies for Emerging Markets

There are over 3 billion mobile phone subscribers in the world – nearly half of the global population. Two-thirds of these subscribers live in the developing world, with Africa often quoted by the ITU and GSMA as the fastest growing mobile region in the world. Mobile subscribers are both the beneficiaries and drivers of the digital economy. With their phones, they communicate frequently and send money to each other. They search for information on entertainment, sports, agriculture, and health. Some of them use simple SMS messages to check the validity of their medicines; others receive regular advice on caring for their babies. A few of them can report undemocratic activity with their phones, or pay their electricity bill, or their children's school fees. Many are maintaining a savings account, taking out (and repaying) small loans, and buying insurance. Most use their phones for work in some shape or form. Increasingly, having a phone is essential, not a luxury.

But the digital economy is not just a collection of individuals, each using mobile phones for their own purposes. A digital economy is a system (or ecosystem) within which stakeholders – including public, private, and non-profit organizations – utilize ICT to communicate and transact with each other and end users. It is this ecosystem that brings about the synergy and power of interconnected, vast technology networks that enable new services. This ecosystem stimulates collaboration to innovate and solve problems such as how to support a family, maximize profits, get around town, or find buyers. The data generated in a digital economy can help governments decide where to concentrate medical resources, or send relief supplies, or develop needed services.

Digital economies are organic, and the pace of their growth can be astonishing. This trend has been seen in digital economies in mature markets, where services have disrupted or disintermediated industry after industry. As an asset, digital data is highly transportable, and in existing digital economies, it tends to be shipped away to the country of least tax resistance. The majority of value creation in terms of pure digital assets is trending this way as personal data in the cloud makes the location where your business value is based a very moveable feast. The mantra is one of disruptive innovation, in Marc Andreessen's terms of how "software is eating the world," and new digital services are absorbing customers from existing industries at a rate of knots, replacing previous revenue models with alternative ones that bring new economic buyers into the mix. For instance, social networks have transformed the way we communicate by incorporating eyeball monetisation using advertising.

In emerging markets, the pace has not been so uniformly fast, and the solutions developed have sometimes been more of an extension of existing practices and behaviours rather than disruptive. An example

of this is Bridge International Academies, where mobile money and digital technology is used to augment and better manage the running of what are otherwise traditional school environments. There are also many ways in which these digital assets are improving other industries, whether by simplifying processes, improving traceability, or increasing reach. An example of this is the way in which mPedigree and Sproxil use simple SMS messaging to allow people to verify their drugs are not counterfeit, and the way Frontline SMS has been used to manage stock-outs. In these ways, the building blocks for a new kind of Digital Economy is forming in emerging markets, characterised not by the disruption of existing services, but by the positive creation of entirely new ones. Put simply, it is hard to disrupt a market when there is little there already. Using these building blocks of digital services, emerging-market Digital Economies are creating new 21st-century services and infrastructure that bring incremental value without necessarily disrupting the existing infrastructure - largely because it may not yet exist.

The Building Blocks of an Emerging Market Digital Economy

How do digital economies emerge? The opportunity and tools necessary for building a digital economy are inherent in the technologies that are currently available, such as mobile devices and broadband. However, access to these tools, and the capabilities to apply them, is less assured.

There are several foundational elements of digital economies, including:

1. ***Internet access*** - to connect businesses, governments, and people
2. ***Transactional access*** - to enable products and services to be built and consumed
3. ***Entrepreneurship*** - to ensure the value is created and retained within the country and population

1 - Internet Access

Internet access is foundational to digital economies, for obvious reasons. Without the access to people, networks, and data that internet access brings, the real impact of digital services on an economy will not be realised. As previously mentioned, Africa is the fastest growing region in mobile connectivity, and the vast majority of urban, peri-urban, and rural users that are accessing the internet for the first time are doing so over their mobile phone.

But internet access comes in many shapes and forms, and its coverage is not always best expressed through the number of connections or subscribers. Many digital services that use the internet to impact on users' lives do not require end subscribers at an institutional level. And the speed and quality of internet access throughout and within different regions of the developing world will remain variable for some time. Access to high-speed 3G services is not required for the internet to be as useful from a development perspective; even low-bandwidth services can act as an enabler not just to individuals and their ability to

gather information and communicate with one another, but as a catalyst for the development and delivery of innovative new services, as well.

As an example – M-Pesa, clearly the most transformative digital service launched so far, requires an absolute minimum amount of connectivity to function. It uses an out-of-date and neglected access platform - USSD - to deliver its service. But in building the service around the available technology, in tooling the experience to what is here now rather than available soon, it has reached ubiquity. One of the phenomenal assets digital technology brings us is flexibility - the ability to very quickly build services on any platform and make them fit for purpose. And yet so often the narrative around internet access is myopically focused on broadband access and subscribers, when so much can be done by re-thinking services and using what's already available.

The ICT-for-Development (ICT4D) field is over-emphasizing the number of internet subscribers as a metric of success. This is understandable, as most policy work on internet access has been driven by meta-level metrics such as the ratio between subscribers to a technology and impact on GDP. These are useful bell-wethers, but they tend to focus activity on subscriber acquisition rather than service delivery. Subscriber numbers are a useful motivator for private-sector operators, and will drive mobile operators to extend services, and this is the current motivation behind activities such as Google's Loon project and Facebook's internet.org. But much can be done to drive development change without necessarily putting a device in everyone's hands - devices attached to technology they may not even be able to afford to charge, and with content that may not be local and relevant.

Internet access can improve transparency of the management and performance of a school. It can improve access to health records and provide content to care workers in medical environments. It can provide diagnostic tools to agricultural extension workers. All of these things can, and are, being done using sometimes nothing more than SMS, and without requiring everyone to have a discrete device with an internet connection.

Internet access to connect the last few billion is a noble and valid goal. For vibrant digital economies we need unfettered and open access to the internet as a platform to enable people to access services, transactions and civil society. It is important to look at how to drive actors to collaborate and innovate to develop and deliver next-generation networks and services. At the same time, it is equally important to consider the steps in the process of reaching this, and look at what can be done now for near-term impact with existing tools. Digital economies can leapfrog just as fast by making better use of existing technologies, as M-Pesa has shown. Leapfrogging does not just mean accelerating to the next generation of technology when it's unclear what purpose and impact it will serve.

Ultimately, when considering access, moving away from our myopic focus on subscribers as a target and looking at impact measures more broadly can result in more meaningful impact. The ICT4D community can be more effective by shifting the conversation to how connecting the last few billion subscribers will improve their communications, health, education, income, and quality of life in ways that are faster, cheaper, and better than their current alternatives. For the end users, that is where the value of the internet lies.

2 - Transactional Access

Transactional capabilities are complex and growing in emerging markets, but many such activities are not economically sustainable. Platforms can support and sustain transactional capabilities. People can benefit from online, accessible marketplaces that connect providers of goods, services, information, and tools with those who need them. MNOs are building platforms. The capabilities are going up, and the costs going down. Most platforms are made available to content and service developers and programmers so that the service offerings can be expanded on that platform. Once these systems are in place, they will promote more entrepreneurship, and provide a distribution channel for new digital content and services.

Focus on Kenya

Population: *44 million*

Mobile money subscribers: *25 million*

Kenya is often lauded as the most successful digital economy among emerging markets. Widespread adoption of the mobile money system, M-Pesa, and the introduction of a broad range of other mobile-based financial services make the country a model of modern innovation. One key enabling factor has been an improved infrastructure - undersea cables providing more bandwidth, power, and access to the Internet. Simultaneously, the cost of handsets has declined, and savvy entrepreneurs recognized the potential for a mobile money platform. These developments have given Kenya a market sophistication that far outpaces its neighbors. There are millions of social users, and local content is being created. There is increasing integration of these services through APIs and the effort of entrepreneurs who have built solutions specifically for platforms such as M-Pesa.

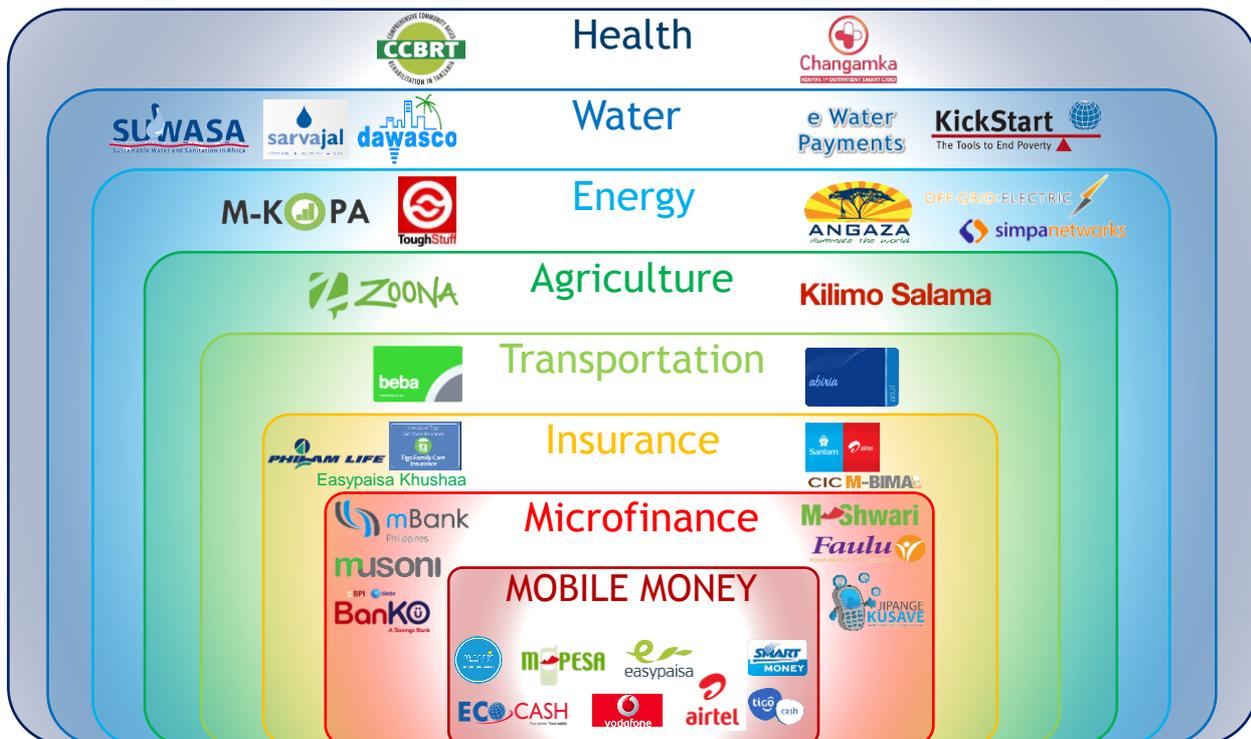
Innovation in this area is coming to (and from) emerging markets. The formal financial sector is expanding services to a growing middle class (often through mobile phones); new operators are entering the market; and government agencies are slowly responding to a more connected digital economy. Non-bank entities have stepped in to fill the gaps. Wizzit has applied its internet-based branchless banking model in 9 countries and serves 6 million customers through partner banks. These innovations are giving people greater access to capital.

Transactional capability shows its value in two clear ways - in its ability to manage the effect of economic shocks, and in the way it opens up opportunities for new transactions. The first way that transactions drive value is clear in emerging markets. Life at the base of the pyramid is a precarious existence, and being able to use simple financial tools, whether remittance payments or savings or insurance, can help to overcome some of the economic instability so common within low-income populations. It is this benefit that the vast majority of donor-funded programmes have supported using mobile money and other digital payment platforms - striving to de-risk the finances of those living on low incomes. But as a consequence of the success of many of these digital platforms, we are seeing this second order of value in transactions emerge - where remittance programmes have led to the development of new payment platforms and a new level of innovation in businesses and services using them.

Digital Payments

Digital payments are a distinct service with clear consumer demand and a committed value chain (comprised of banks, mobile operators, aggregators, and agents). The market potential for digital payments is considerable. The adoption of digital payments also leads to productivity gains for organizations. These gains are estimated to be \$300 billion in Sub-Saharan Africa. The World Bank’s Consultative Group to Assist the Poor (CGAP) has recently looked at how digital payments are creating new business models across multiple sectors, from Health and Water & Energy Access to Agriculture:

Figure A: Digital Payments Ecosystem Development



Source: Adapted from CGAP

CGAP has identified over 50 businesses, largely in East Africa around Kenya, that are using digital payments to revolutionise access to services and the viability of delivering key infrastructure to low-income users (Figure A).¹ For many, this is considered to be a revolution similar to that of micro-finance in that it is a model that can drive phenomenal innovation and social change within these markets.

Below are some examples of organizations that have grown quickly with a digital payments model:

- *Agrilife* in Kenya by Mobipay aggregates points for farmers and other members of the agricultural value chain. Farmer histories can be used to underwrite and provide financing. Other services are integrated with the financial services providers.²
- *MKOPA* in Kenya offers mobile-payment services for solar units, bringing access to clean solar energy for households to millions by making it cheaper than kerosene lamps.³
- *Bridge Academies* in Kenya allow parents to pay fees with M-Pesa. This builds transparency, empowers teachers to manage payments, and allows the organization to grow.⁴
- *M-shwari* in Kenya – an offshoot of M-Pesa – allows mobile subscribers to save and borrow money. Using data analytics around pay-as-you-go top ups and existing M-Pesa transactions, simple loans and saving schemes can be offered. The service has had transformative effect on the credit and lending environment in Kenya, and has been taken up by over 15% of all active M-Pesa users.⁵

Despite the success of these companies, and the rapid adoption of these new services (particularly in Kenya), digital payments are underutilized, and there is a vast potential for growth in digital payments that would benefit the broader digital economy. M-Pesa, for example, is widely cited as one of the most successful digital payment services, but there is potential for much more activity on the platform. Little of the transactional capacity between M-Pesa and its millions of subscribers is used for other purposes.

Digital payments can also provide measurable benefits to the poor, and thereby bring them into the transactional, digital economy. The Bill & Melinda Gates Foundation (BMGF) Financial Services for the Poor team performed a literature review on the emerging field of digital payments. They found that digital payments can benefit the two billion unbanked if the services are cheap; convenient and proximate; provide reminders and reinforce individual thought processes; and are varied to meet the needs of different user groups. In order to have cheap, ubiquitous access to a variety of services, it is necessary to have a low-cost, open financial services platform on which these services can grow.

¹ <http://www.cgap.org/blog/global-landscape-digital-finance-plus>

² <http://www.agrilife.co.ke/>

³ <http://www.m-kopa.com/>

⁴ <http://www.bridgeinternationalacademies.com/>

⁵ <http://www.cgap.org/blog/m-shwari-kenya-how-it-really-being-used>

3: Entrepreneurship

Entrepreneurship in general has taken root - not just through the tried and true accelerator model, but also through the cultivation of a broader community around entrepreneurs. Continuing with the example of Kenya, there is a supportive ecosystem developing in Nairobi, with both physical and virtual hubs promoting collaboration and partnerships.

However, the successes in Kenya have been hard fought, and the consensus among financial service and development experts is that there is much more potential for growth and expansion of the market. A recent report by the GSMA discusses both the opportunity and challenges facing digital entrepreneurs in Kenya, even though this is a beacon country for developing digital economies.⁶ They report a notable lack of early stage finance, with around 60% of all entrepreneurs having to bootstrap and self-fund their new digital businesses.

We can see in Kenya how there are two parallel models building out the nascent digital economy:

- Konza City is a development by the Kenyan Government that represents a late 20th-century model of a digital economy, in that it is focused on building infrastructure and offices for large companies to create mainly out-sourced jobs in the tech sector.⁷
- The iHub is a smaller, funky, agile community. It has grown organically around a group of coders and entrepreneurs to be a focal point for the tech sector not just in Kenya but across Africa, as the model has been copied in many countries. It is decidedly bottom-up rather than Konza City's top-down approach.⁸

These parallel top-down and bottom-up approaches provide an interesting narrative about how it is possible to create value in a digital economy via policy alone. Undoubtedly, Konza City's approach will create jobs, but these may be low-value jobs offering training and income but not empowering people to share in the value created. Entrepreneurship creates more value for the employee, and builds a vibrant innovative culture that can provide a more persistent digital economy of home-grown businesses, but policies often struggle to keep pace with entrepreneurship in such a fast-paced industry, and support from government can often be late and irrelevant if it comes at all (as can be seen in the criticism of the UK government's attempts to keep pace with London's 'Silicon Roundabout' digital entrepreneur community).⁹ Local entre-

⁶ <http://www.gsmaentrepreneurshipkenya.com/>

⁷ <http://www.konzacity.go.ke/>

⁸ <http://www.ihub.co.ke/>

⁹ <http://techcrunch.com/2013/07/05/goodbye-mr-silva-now-its-time-to-test-tech-city-yourself/>

preneurs point to the need to spend on things that are immediately needed for their businesses to thrive, rather than large infrastructure projects:

“Even a fraction of the funds for both cities [Konza City in Kenya and Hope City in Ghana] could be invested in better ways to promote local tech. Things like better internet, power generation, or providing angel investment to startups,” - Ghana Tech Entrepreneur Yaw Owusu.¹⁰

It is perhaps better to see work in digital economies in emerging markets as more of a continuum, with entrepreneurship as the desired end point, but with many ways in which digital technology can provide work and revenue. The Rockefeller Foundation has done some excellent work on examining the various roles that digital jobs can play in digital economies, from impact sourcing all the way through to digital entrepreneurship (Figure B):¹¹

Figure B: Role of Digital Jobs in Digital Economies



Source: Rockefeller Foundation

What is needed is a clear structure that can hold the hand of individuals throughout this process. This could include, for instance, setting a clear path for someone receiving basic IT training to obtain the needed skills to work in impact sourcing, which could then help them earn valuable revenue and reinforce skill development to the point where higher-value entrepreneurial work is possible.

¹⁰ <http://www.thisisafricaonline.com/Perspectives/Billion-dollar-tech-cities-Hope-and-Konza-Boon-or-bane-to-Africa-s-tech-movement?et=true>

¹¹ <http://www.rockefellerfoundation.org/our-work/current-work/digital-jobs-africa/reports-publications>

Companies like Digital Divide Data are doing this, marrying impact sourcing to training and education to provide pathways to higher-value jobs.¹² The development community would benefit from a full research study that looked at individual needs across this spectrum of digital work, as well as the systems that need to be in place to support transition through each stage. Employment and entrepreneurship are the key ways value will be measured in digital economies. A better understanding of the continuum of low- to high-value jobs, the position these jobs have within an economy, and how an economy moves from one side of the spectrum to another can help shift policies and programs towards digital economy development.

¹² <http://www.digitaldividedata.org/impact>

Section 2 - The Benefits of a Digital Economy

A digital economy has a great impact on socioeconomic development by supporting SME growth and creating jobs. A digital economy stimulates competition and innovation, leading to the development, localization, and delivery of new products and services. Digital financing gives retailers the opportunity to sell goods and services with a different business model. It provides consumers with the ability to Pay As You Go, abandoning the old model of reducing goods and services into affordable increments, and enabling people to buy things without cash, which reduces security risks.

A digital economy also provides jobs and improves the standard of living. In Sub-Saharan Africa, where population growth outpaces jobs created, youth under 25 years of age make up 60% of Africa's unemployment, and a reported 122 million new jobs are needed by 2020 in order to reduce poverty.¹³ Agriculture does not support a lot of living wage jobs, and while the sector still accounts for larger percentages of GDP and employment than in mature markets, it has been declining as rural laborers flock to urban centers in search of manufacturing or service jobs.

The digital economy improves the standard of living by increasing the value of labor input. Mobile financial services save people's time, improve the quality of labor inputs, increase mediation, and lower the cost for B2B transactions. They can also give greater access to capital, and connect new, remote users to existing markets.

The following are key benefits that stem from the development of digital economies:

B2B Opportunity

There is an opportunity to drive efficiencies in the B2B space by fostering a more robust digital economy. In Africa, there are millions of small independent shops that are inefficient in ordering and fulfilment. This segment could be the catalyst for creating open platforms that will allow business model innovations. Furthermore, organisations of every size make cash-based salary or other payments to partners, employees, and other beneficiaries. Converting cash into digital payments can increase operational efficiencies. In Uganda, USAID helped six implementing partners transition from cash to digital payments for employees and training beneficiaries.

¹³ <http://www.changemakers.com/futureforward/blog/african-youth-and-job-market-asset-or-liability>

Data Monetization

The expansion of mobile phones and connectivity has resulted in massive amounts of new data on individuals about whom very little was previously known. This data has enormous value for private-sector firms, governments, and non-profit organizations serving these segments. Better data on customer, constituent, and end user needs can help organizations in any sector design, develop, and deliver better goods and services, achieve operational savings or other efficiencies. Most organizations, if they are able to collect or acquire data on users or suppliers of raw inputs, lack the ability to analyze this data and effectively integrate it, on an ongoing basis, to improve processes and offerings. And issues of privacy and security of personal information are bound to prevent organizations from capitalizing on this data's full value until standards are set.

New Business Models

A digital economy provides the market condition in which collaboration and new business models can emerge. This can be shifting the economic buyer or payer of a product or service from the end user or beneficiary to another entity. The digital economy can also offer new tools and services to help users work around infrastructure constraints in place today. For instance, crowd funding for social gatherings, such as funerals, could allow friends and families to use an app or service to contribute to a memorial fund, bypassing the role of traditional financial institutions like banks and insurance companies.

Barriers to Entrepreneurship

Digital entrepreneurs include non-tech entrepreneurs, "intra-preneurs" (i.e., those who act like entrepreneurs in government or other large organizations), and impact investors. Three things are essential to entrepreneurs: ideas, capital, and execution. In emerging markets, access to capital and skilled execution are both in short supply. SMEs are particularly underserved, and as in developed markets, most of them in developing countries fail within the first few years. For instance, five in seven businesses in South Africa fail the first year, and in Kenya, 60% fail within the first three years of operation.¹⁴

Challenges for entrepreneurs in a digital economy are distinct from those in a traditional economic environment. Traditional economics is about scarcity. In a digital economy, information is not scarce. Yet, other critical elements of successful digital entrepreneurship, especially in developing countries, are limited in their supply. These include:

¹⁴ <http://www.entrepreneurmag.co.za/advice/starting-a-business/small-business-advice/small-business/> and <http://ir-library.ku.ac.ke/bitstream/handle/123456789/7142/Caleb%20Nyaga.pdf?sequence=1>

1. **Financing:** As mentioned previously, early-stage financing is in short supply. The donor and impact investing community have a role to play in providing start-up funding to businesses with the greatest potential for impact.
2. **Talent and the skill** to execute on ideas. Talent often gets siphoned off by corporations that can pay more and offer greater job security. Entrepreneurship may not be as attractive as it is in many mature markets. Furthermore, basic business practices are missing. For instance, entrepreneurs understand the needs of their home markets, but lack the ability to assess market size or develop a business case. Furthermore, many developing countries lack the support systems, networking, and mentorship to cultivate needed skills and support enterprise growth. Providing these areas of support addresses key missing elements.
3. **Infrastructure** is limited, many lack the experience of being online, and the basic digital literacy rate is low. Much of the infrastructure development is focused on urban areas, resulting in a gap between rural needs and the services being created by developers focused on urban markets.
4. **Policy and regulation.** Businesses in many developing nations succeed not because of government and institutions, but in spite of them. A lot of innovations are taking place in areas that are poorly governed, and the regulatory environment is very weak in certain countries. Governments have created issues for creditors, particularly around bankruptcy laws and the ability to get money back, and bankruptcy laws can impact start-ups. Furthermore, more government support is needed for ICT-in-education programs.
5. **Culture and society.** Failure is not culturally acceptable, and there's no social safety net for entrepreneurs.

Barriers to Creating a Digital Economy

There is a clear link between project or enterprise sustainability and scale. Scale is dependent on robust and reliable business and technology systems. Vital Wave's work with the BMGF in Uganda has demonstrated the ability to initiate, for instance, digital payments, even within a weak system. But those weaknesses must be understood and remedied or circumvented before a full (or national) rollout of a popular service is implemented. For many digital services, meeting the latent demand would break the internal or external systems in place to support these services. The systems need to be fixed to become robust and reliable to move beyond pilot phase and achieve scale.

Regulators can also be a barrier for creating a digital economy. Regulators are often very risk averse when it comes to financial services, though engaging with regulators and creating space for innovation is critical. The regulator in Kenya is an enabler *and* inhibitor with m-Pesa, where liberal mobile money regulation at the start of the launch of the service has since been countered by taxation as the service has grown. This

will increase transaction costs and potentially impact on the second-stage development of mobile money as a payments platform for SMEs.

Barriers to Digital Payments

Technological bottleneck – Technologies being used today tend to be closed and built around narrow use cases. These technologies lack robustness and fraud protection, which is not conducive to the growth of digital payments. Rather, open, standards-based technologies, with fraud protection features can help ensure individuals know their payments have gone through.

Lack of coordination or interoperability – In most countries, the main entities with a stake in the digital economy are not developing a coordinated or interoperable digital environment. Banks are coordinated around payment switches, and MNOs are new to digital financial services. Regulators are slow to recognize and react to new mobile financial services and how they will affect the broader financial sector, and there is little coordination between mobile and finance regulations. Interoperability and open standards, while perhaps not directly benefiting a single stakeholder, give greater access to markets, and the ability to monetize data and services.

Business case uncertainty– There must be a coherent business case to build out the digital ecosystem, but few stakeholders are incentivized to do so. MNOs are focused on observable opportunities, and they invest in a relatively small portion of those. The international development community is in the best position to collaborate with governments to lead and catalyze digital ecosystem development, including supporting cross-sector partnerships as well as the development and application of methodologies and repeatable assets that allow value to be created and captured in the local digital economy.

Embedded interest and incumbency – A low-cost digital services platform would threaten existing banking models. Incumbents and their embedded interests (e.g., side payments) will not be overcome easily. Coordinated action will be necessary to create a business environment where smaller, more nimble players can compete and where disintermediation can take place.

Section 3 - A Call to Action

The idea that technology and information will be available to everyone is compelling. To be sure, there is a risk of negative impacts: government controls, the turmoil of a bubble-and-burst cycle, and increased disparities. Collaborative action by all stakeholders is required to create the conditions for scale and support the expansion of the digital economy:

- **Partnerships** – Digital economies will thrive within an ecosystem enabled by many players. At a country level, supportive regulation is required, as well as a Government that recognises and responds to the particular needs of digital entrepreneurs. Mobile operators need to be able to create environments that support innovation as a way of generating profit. Foundations and donors should cultivate granting capabilities that are open to risk and the potential upside for social and economic development. All of this points to a simple fact - *there is no one actor who can do this alone.*
- **Large MNCs** – Multinational companies have a role to play in providing the products and services that enable the digital economy and supporting the growth of the ecosystem. Qualcomm spends 20% on R&D, and is constantly innovating on devices. The company's Wireless Reach initiative supports entrepreneurs with ICT training, connecting with mobile platforms. In Indonesia, the company supported a project to resell voice minutes. Ultimately, the project failed because mobile density grew so fast that the demand for resold minutes evaporated. Wireless Reach revisited the business model and incubated a social business network of 15k entrepreneurs that reach 1.5 million unique customers. Microsoft's role in supporting application developers is another example. Windows democratized application development, putting the complete life cycle in the hands of developers - including initial and advanced coding, testing, and customer support. These initiatives show that MNCs may be in a position to take risks and adapt their models to support entrepreneurs, and overcome changing market conditions.
- **Industry facilitator** – The advancement of digital economies would be accelerated by establishing a practice of digital development, as opposed to approaches and programs siloed into specific verticals. A dedicated industry facilitator would be able to develop a narrative around the positive future impacts of a digital economy and orchestrate collective action towards shared goals. NESTA in the UK is a great example of a Government-backed organisation that has supported innovation in the digital economy.¹⁵
- **Government** – Public-sector funding must be directed toward putting in place the building blocks (infrastructure and entrepreneurial incentives) of digital economies.

¹⁵ <http://www.nesta.org.uk/>

Working in concert, these organizations can focus on four key areas to further the development of a digital economy:

1. **Business models** – Understanding where the revenue stream is coming from is critical, particularly considering that digital advertising, so common in other digital economies, is unlikely to be the driving revenue stream. Understanding B2B revenue streams and transactional revenue streams is critical.
2. **Transaction platforms** – To support the lack of digital advertising as a revenue stream, transactional platforms that support P2P payments must be scaled and ubiquitous.
3. **Affordable handsets, data and access** – Handset subsidization does not exist in emerging markets as it does in the developed world, and networks will be strained as billions of new smartphones enter the market. The development of low-cost smartphones and application of business models that reduce or delay payment to the end will help overcome the access barrier while building out network capacity will support its ongoing use.
4. **Localized content** – One of the biggest opportunities for donors and foundations is in the support of localised content, which will be critical to driving adoption. Without a clear set of valuable content for a local market, connectivity and access is an expensive, hard sell. The donor community can support the ecosystem for the development of local and crowdsourced content. Furthermore, large and small companies in many industries can directly engage with local content and service developers through acquisition, partnerships, and incubation programs.

Summary

- **B2B is a big invisible opportunity.** It is tempting to focus on projects that have photo-appeal, such as those that put physical infrastructure in place or put tablets or other ICT equipment into people's hands. But there is also significant market and impact potential for B2B services such as process management, improving the institutional capacity of schools and health organisations, or simply opening up previously unavailable data to users.
- **Systems are straining or broken and need co-ordination.** Very few, if any, organisations are looking holistically at the needs of emerging digital economies. There is a silo-driven approach to implementing digital services, whether from within a particular ministry (e.g., Health, Education) or a similar silo within the private sector or public foundations. Standardization and coordination are needed within the ecosystem before there is a critical failure and before Balkanised systems become the norm.
- **Most capability problems are not technological.** There has been a tremendous amount of effort into technology training, which has reaped rewards in terms of an increase in digital service productivity.

However, what is needed are the complementary skills training programmes that go alongside this to support general economic sustainability. As the GSMA research in Kenya shows,¹⁶ there is a strong need for generic business development skills training and mentorship that has little to do with technology, and has more to do with equipping a generation to be viable entrepreneurs.

If these factors are addressed digital revenue models will develop for the ecosystem, bringing money to individuals, SMEs, and local corporations. Digital services will move beyond just basic service or content delivery and into a genuine economic powerhouse for the region. Furthermore, the value proposition for digital economies will become clearer and be a driver to digital creation. This success will be self-reinforcing and encourage more to enter the sector.

¹⁶ <http://www.gsmaentrepreneurshipkenya.com/>