



DALBERG

IMPACT OF THE INTERNET IN AFRICA

*Establishing conditions for success and
catalysing inclusive growth in Ghana, Kenya, Nigeria and Senegal*

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Dalberg

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Executive summary

The Internet is a tremendous, undisputed force for economic growth and social change. Not only has it unleashed new forms of connectivity, but it has also provided an outlet for new forms of innovation, entrepreneurship and social good. The Internet has also proven a dynamic tool for stimulating economic growth in developing countries, with the World Bank reporting that a 10% increase in broadband correlates to a 1.38% increase in GDP growth¹. Beyond GDP growth, the Internet also provides opportunities to pursue social and developmental objectives. Throughout the developing world, the Internet is connecting remote populations to markets and strengthening the overall efficiency of service delivery in areas such as health, education, livelihoods and financial inclusion, as well as creating access to government services for the most marginalised populations.

Still, the story of the Internet in developing countries is very much a work in progress. In particular, the Internet's potential is still largely untapped in Sub-Saharan Africa, the focus of this report. Broadband penetration on the continent is low compared to regions of similar income, and although 15% of the world's population lives in Sub-Saharan Africa, only 6% of the world's Internet users do. Despite widespread agreement on the web's potential to transform lives and reduce poverty, there is a paucity of information that details how policymakers and investors should capitalize on this potential.

This report intends to help policymakers capture the potential of the Internet for social and economic development—to help them understand how their constituencies already use the Internet, where the opportunities lie, what future

potential for social impact the Internet offers, and what their countries need to get there. Based on a survey of more than 1300 businesses, including nearly 1000 SMEs and extensive interviews with experts across Ghana, Kenya, Senegal and Nigeria this report arms policymakers with data on the social and economic benefits of broadband and Internet. It also uses extensive secondary research and qualitative and quantitative analysis to support policymakers in harnessing the Internet's potential. Finally, it provides actionable recommendations across policy portfolios.

The current state of impact

This report provides detailed assessments of the current and potential impact of the Internet on socioeconomic growth across seven sectors: agriculture, education and labor, energy, financial inclusion, governance, health and small and medium enterprise (SME) growth. It also examines the role that government, private sector and donors have played in building the ecosystem for Information and Communication Technology (ICT) innovation and driving this impact.

KEY FINDINGS CONCERNING THE INTERNET'S CURRENT AND POTENTIAL IMPACT ON SOCIOECONOMIC GROWTH INCLUDE:

SMEs are surprisingly bullish on the Internet's potential.

According to Dalberg's survey, more than 80% of SME owners expect that the Internet will help them grow their business, and 70% of those expect to hire new employees as a result. Historically, Internet applications have focused on marketing and communications, but solutions focused on service delivery are on the rise. A Dalberg review of Internet-enabled solutions across the four countries found that Internet-enabled solutions developed within

¹ Qiang, C. Z. W. World Bank. "IC4D: Extending Reach and Increasing Impact," Economic Impacts of Broadband, 2009. Chapter 3.

the past three years are increasingly focused on service delivery and information management. This figure has increased from 17% to 24% of total use cases over the past six years suggesting that new organisations are focusing on increasingly sophisticated uses for the Internet versus organisations that have used the Internet for a while.

SMEs report that enterprise systems have a high impact—but they receive scant donor and policymaker investment.

According to experts, management and operations are not amongst the “sexier” Internet-based applications, but across sectors, surveyed SMEs consistently cited the Internet for its usefulness in addressing management challenges. These include payroll, information management, and backend systems—where key informant interviews suggest a short-term prioritisation would unlock significant growth. More than half of firms cited in our survey related services in supply chain management as driving current impact. Cost savings from enterprise systems, for example, have delivered 30% savings for national health insurance schemes. Despite their reported usefulness, enterprise systems receive little attention from policymakers and donors who tend to focus on user facing solutions such as mobile phone technologies.

While sustainability and scale is still elusive across all sectors, certain socioeconomic sectors have been better able to capitalise on the Internet’s potential. Secondary research and interviews with experts suggests that the majority of solutions remain stuck in pilot phase or lack evidence of impact on developmental outcomes such as better health care, improved educational performance or increased household level income. However, across all sectors, agriculture demonstrated solutions that have pushed beyond the pilot phase towards scale. This is opposed to areas such as health and education where questions around sustainability and scale remain. More than 40% of Internet-enabled solutions currently target the education, governance or health sectors, yet the majority of these solutions remain in pilot phase. This fact does not suggest that these solutions cannot be successful but it does raise questions as to where, how and why appropriate financing, measurement and innovation should be focused in order to ensure broader impact.

HIGHLIGHTS FROM KEY SECTORS INCLUDE:

► **Agriculture: Solutions in agriculture are demonstrating impact on operations, leading to direct impact on household incomes:** Survey results of over 1 300 firms cited “access to information” as one of the Internet’s most significant benefits for their businesses—but agricultural firms voiced the strongest emphasis with over 70% of respondents ranking access to information as ‘essential’. SMEs within the sector have used a range of new tools, such as Nokia Life Agricultural Services and Ghana’s Esoko, to obtain information that was once difficult to find over long distances, such as market prices and weather information. In addition, Internet-enabled

supply chain management has significantly reduced shrinkage and leakage—two key problems faced along vast, multiplayer value chains.

► **Health: Internet-based applications—especially, eLearning and remote training—have begun to remedy a longstanding and life-threatening shortage of qualified health workers in Sub-Saharan Africa.** By replicating one successful training model in Kenya, AMREF, could upskill the current nursing workforce nine times faster than the current infrastructure in Kenya, Ghana, Nigeria and Senegal. Concerted investments in eLearning, with matching government support to promote connectivity and lower the cost of bandwidth, can reduce the cost of health care work-force training down to \$460 per nursing graduate.

However, across the sector, Internet-enabled solutions are characterised by a plethora of pilots with few examples of sustainable or scaled solutions. There are a few examples and governments recognising the importance of interoperability but, on the whole, despite mHealth and eHealth seemingly having the longest track record, the industry continues to lack evidence and appears stuck in a start up phase.

► **Education and labour: Survey results in the education sector showed that respondents tend to value the Internet more than other sectors because it provides access to information—resource centres, libraries, curricula, and facts.** But for now, evidence of impact on outcomes remains low and the Internet’s greatest educational impact appears to be emerging outside the classroom—through mobile enabled solutions such as Worldreader’s use of the Binu app for reading. Realising the Internet’s potential benefits for classroom learning will require sustained investment in broadband infrastructure. Supporting learning innovation outside the classroom will require cheaper access to high quality, low bandwidth.

► **SMEs: The Internet brings top-line growth and bottom-line improvement to SMEs outside of the tech space.** Dalberg survey data suggests that SMEs expect to benefit from the Internet primarily as an improved platform for marketing, giving them better access to customers and improving their customer relationship management.¹ It is clear that business growth opportunities are available for all companies willing to market themselves online, regardless of whether customers can pay for goods online.

► **Financial inclusion: eCommerce in Sub-Saharan Africa is still nascent, but at the same time, mobile money (mMoney) and a range of payment solutions are shaping opportunities for eCommerce to emerge, for example, Pesapal in Kenya and OzinboPay in West Africa.** mMoney successes, such

1 Dalberg Research Survey.

as M-Pesa in Kenya and, more recently, MTN mMoney in Ghana, seem to precipitate the rapid emergence of solutions – e.g. Nigeria’s Pagatech – that already integrate online and mobile web to deliver a suite of payment solutions for its customers. The Internet also has significant potential to extend financial services to the unbanked, to drive eCommerce—and to grow markets. More than 60% of financial organisations surveyed view the Internet as essential, the second highest response out of all industries.

CROSS-CUTTING THEMES:

Social media and social networking is proving to be a catalyst in driving Internet access and impact. Social networking, particularly through mobile Internet, is changing the nature of users’ first-time experiences with the Internet and will spur more sophisticated use going forward. The estimated 100 million social networking accounts in Africa – including mobile enabled networks such as Mxit, Saya, 2Go and Eskimi – signal a dynamic platform for marketing, communications, information sharing and citizen engagement. Social networks can create stronger links between government, educators, service providers, businesses and citizens. Users are already engaging on topics including music, dating and sport, but these networks are also quickly expanding to include education, health information and governance, and will undoubtedly influence how users engage in more sophisticated Internet use over time.

Low-bandwidth intensive Internet solutions will bring new users online faster. The Internet in Africa is in part a story of managing the challenges of limited infrastructure, therefore, building low bandwidth solutions can open up opportunities. This will change over time, but is fundamentally different from the bandwidth-rich content developed in countries where users have grown up accessing the Internet on desktop computers. First-time Internet users in Africa are no longer introduced to the Internet via email and software, but by mobile phones—and often via social networks. These trends require new ways of thinking about the infrastructure requirements (high and low bandwidth access) and investments.

However, high speed broadband connections are also needed, particularly to allow SMEs to realise the huge gains offered by cloud computing. Cloud computing offers significant cost savings, especially for SMEs. But capturing the savings of cloud-hosted software will require affordable, reliable connectivity. Eighty percent of SMEs believe they will grow and create jobs with better Internet. However, price and quality of service pose a significant barrier to access. For example, the cost of a mobile-broadband plan in developing countries represents between 11.3-24.7% of monthly gross national income (GNI) per capita versus 1.2-2.2% for developed world². In the education sector, the availability of impactful solutions based on video, such as Khan Academies, will not be feasible unless access to high

quality, uninterrupted bandwidth is available.

Data is getting ‘bigger’. The importance of access to publicly held data was emphasised by a number of interviewees and will continue to provide an important foundation for the development and growth of new solutions targeting national level impact. Open Data Initiatives have been initiated by a number of countries, Kenya was the first country in Sub-Saharan Africa to introduce a government open data portal and the Ghana Open Data Initiative is in the process of uploading 3 000 data sets as well as building out 140 citizen applications that will leverage this information.

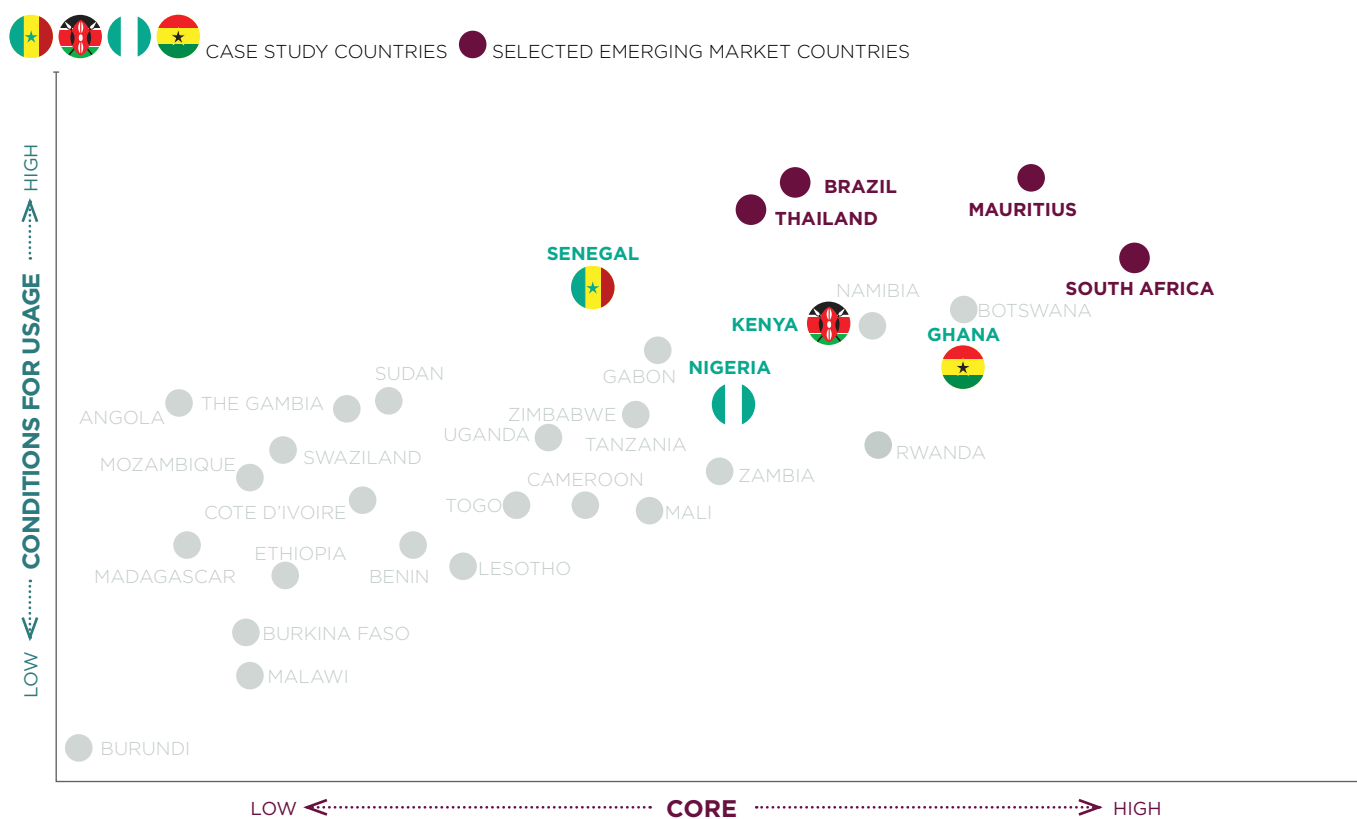
Realising future impact: Conditions for impact

Policymakers, SMEs, and innovators are now writing the story of the Internet’s role in broad-based socioeconomic growth. Predicting how this narrative will unfold is in some ways a fool’s errand. For example, mobile telephony has changed paradigms in ways that few could have forecast ten years ago, and now, mobile Internet has similar disruptive potential. Notwithstanding these uncertainties, it is undisputable that policymakers have a foundational role to play in creating and ensuring an enabling environment for Internet-based solutions. **In particular, countries that wish to reap the Internet’s potential for social and economic gains must continue to invest in infrastructure and the broader ecosystem for innovation.**

Sub-Saharan Africa appears to be on the right trajectory to catch up with countries that maintain a strong enabling environment. As illustrated in Figure 3, two key pillars provide the basis for a well-functioning Internet economy: “core infrastructure” and “conditions for usage.” Core infrastructure includes aspects of the enabling environment – both physical infrastructure and characteristics of the business environment, such as mobile and Internet coverage, electricity, availability of skills, education levels, and perceptions of corruption. Conditions for usage include those that influence access, awareness, availability and attractiveness. They include a range of drivers, from the cost of devices and price of packages to factors affecting citizen awareness, such as education levels, usage and relevance of services.

² ITU Facts and Figures 2013, ITU World Telecommunication / ICT Indicators database.

FIGURE 1: MAPPING OF COUNTRIES BASED ON CONDITIONS FOR USE AND CORE INFRASTRUCTURE



Source: Dalberg analysis

Based on a mapping of these indicators across all countries in Sub-Saharan Africa, we see that, absent a minimum investment in infrastructure, policymakers face a clear ceiling to progress on usage conditions. Our analysis, based on nearly 60 different indicators, shows that without a minimum investment in infrastructure, conditions of usage—including the number of Internet users—will not rise above a certain level. Countries in Sub-Saharan Africa, while on the right trajectory to build thriving ecosystems, must continue to invest in core infrastructure as well as usage conditions in order to maximise the Internet's impact.

Recommendations

In this ever-changing context, policymakers must continue to balance the challenge of enabling market conditions, catalysing the provision of equitable service delivery, protecting privacy and championing social, economic and job creation impacts that the Internet can help achieve. In recent years, Africa's mobile and Internet markets have seen significant growth, particularly where public-private partnerships, healthy competition and open access to information flourish. Whether the Internet's potential to drive economic growth and social outcomes is realised

will depend largely on the ability of public, private and social sector actors to set policy in a way that will build an ecosystem for innovation.

In achieving this goal, policymakers must respond to three key challenges:

- ▶ **Growth: Developing appropriate policies and investment plans** to promote growth and innovation whilst appropriately protecting consumers;
- ▶ **Protection: Keeping pace with the new requirements of digital information** and the set of industries that emerge to take advantage of new opportunities; and
- ▶ **Inclusion: Managing digital inclusion** to ensure that the Internet is not only made available across geographic and demographic boundaries but that Internet content also creates channels for socially and economically beneficial services.

Navigating the challenges will not be easy, and much can be learned from those who have successfully harnessed the Internet's power to drive economic growth, job creation and social outcomes. Therefore, this

report provides illustrative examples of how actors in government, private and social sectors –through principles of openness and transparency – can play a catalytic role. Some key recommendations highlighted throughout this report include:

- ▶ **Prioritise convergence across sectors and the broader enabling environment.** Capturing the Internet’s potential for economic growth and social gains requires thinking and acting collaboratively, often across sectors. Harnessing ICT is an endeavor that implicates multiple policy actors across multiple sectors. For example, Kenya’s alignment of eHealth strategy and ICT policies has not only delivered significant cost savings but also resulted in interoperability standards and a national electronic medical records system¹. These system innovations are foundations for scale, growth, and future innovation.
- ▶ **Invest in critical infrastructure.** Innovation is not enough. Ideas are not enough. Both require appropriate infrastructure to bloom. Throughout Sub-Saharan Africa, clear limitations to productive Internet access and use exist, and overcoming them will require appropriate investment in both infrastructure as well as demand side factors such as access, affordability, awareness and attractiveness of solutions (noted as ‘conditions for use’). Poor performance on these core conditions, comprised of indicators on physical infrastructure and general business environment, cannot be leapfrogged.
- ▶ **Coordinate and partners with private sector in order to drive market growth.** Governments can play three primary roles in developing their country’s Internet economy – leadership, governance, and promotion of eGovernment services. Within each role, they should consider the question of how best to engage with both donors and the private sector in order to maximise inclusive growth. Leadership requires setting a national ICT vision and creating the appropriate government implementing agencies to support that vision. Governance includes the timely creation of legislation, fair allocation of licenses, arbitration and resolution of disputes relating to all components of an Internet economy. Promotion of eGovernment services both helps bring new citizens online and boosts the attractiveness of getting online for the first time.
- ▶ **Set the vision:** Strong government leadership in defining a national vision and strategy for the use of ICT and the Internet aligns a diverse set of national actors.
- ▶ **Catalyze inclusive growth:** Creating an environment within which actors can invest and collaborate around the use of the Internet is a crucial role of government. Finding the right balance of market forces and healthy competition that facilitates inclusive growth will require active engagement and collaboration with the private sector. Examples from the Kenya ICT Board and TEAMS cable investment illustrate this potential.
- ▶ **Act as a first adopter:** The public sector is typically the largest consumer of Internet-enabled products and services, which creates an opportunity to lead by example and support its citizens’ entry into the digital era.

1 Current Status of E-Health in Kenya and Emerging Global Research Trends, International Journal of Information and Communication Technology Research, January 2012 available at http://esjournals.org/journaloftechnology/archive/vol2no1/vol2no1_7.pdf



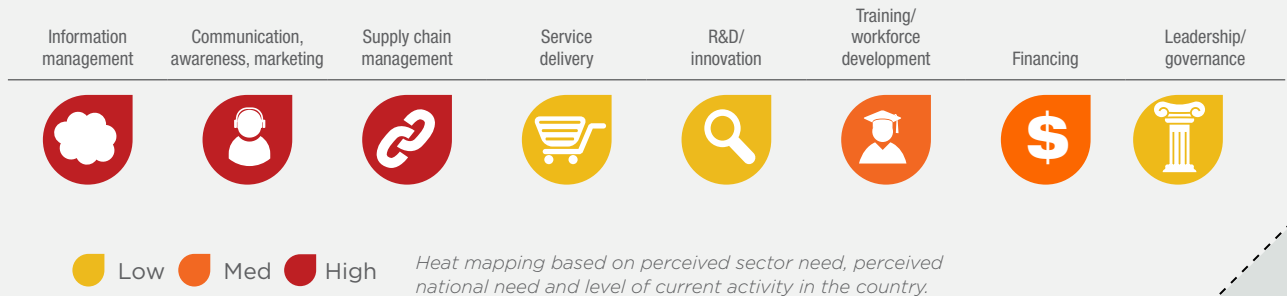
01

PROFILE: AGRICULTURE – STRENGTHENING VALUE CHAINS

Internet-enabled businesses within agriculture have grown to the stage where they can achieve scale and impact. Esoko, from Ghana, launched out of a public-private partnership to address market price transparency and evolved its services beyond that. Virtual City, meanwhile, received growth capital from Nokia and Acumen Fund after its proof of concept in order to scale. Within agriculture, information management, marketing and supply chain management solutions show the greatest potential for impact from Internet-enabled solutions. Such successes suggest that the sector is ripe for for-profit business models to flourish, particularly in the presence of investors looking to shift pilot projects into scalable businesses. Policymakers can improve the conditions for Internet-enabled agriculture businesses by investing in literacy and eLiteracy, public data, eliminating customs duties on Internet-enabled devices and, in some countries, coordinating interventions involving multiple stakeholders.

FIGURE 2: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES IN AGRICULTURE

INTERNET-ENABLED BUSINESSES WITHIN AGRICULTURE HAVE GROWN TO A STAGE WHERE THEY ARE BOTH IMPROVING OPERATIONAL EFFICIENCIES IN THE VALUE CHAIN AND DEMONSTRATING IMPACT ON FARMER INCOMES.



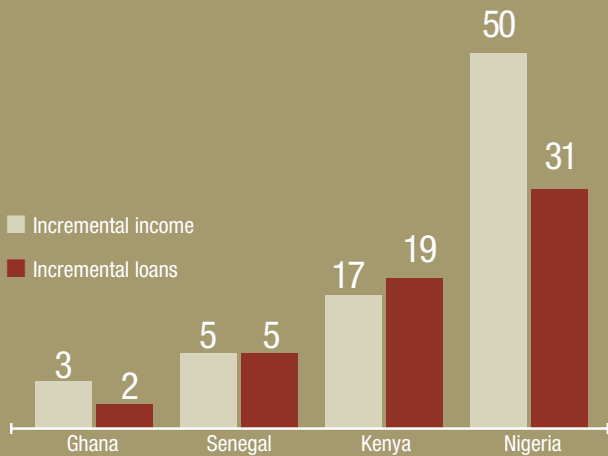
SECTOR INTENSITY



VIRTUAL CITY HAS SEEN HIS SUPPLY CHAIN MANAGEMENT SOFTWARE REDUCE THE LAG BETWEEN PRODUCE DELIVERIES AND CASH COLLECTIONS FROM 8 DAYS DOWN TO 3, FREEING WORKING CAPITAL

ENABLING BUSINESSES THAT INCREASE FARM GATE PRICES COULD SHIFT \$75M TO THOSE MOST IN NEED WITHIN FIVE YEARS AND GENERATE \$55M IN FINANCING

CUMULATIVE FIVE-YEAR IMPACTS, \$MILLION



HIGH QUALITY, RELIABLE INTERNET CONNECTIVITY IS KEY TO THE SUCCESS OF DISTRIBUTED AGRICULTURAL COLLECTIONS BUSINESSES WHICH REQUIRE SYNCING INFORMATION BETWEEN MOBILE DATA COLLECTION DEVICES AND A DATABASE WITH HISTORICAL RECORDS

KEY ASSUMPTIONS

- ▶ Farmer incomes will increase 9% based on the lower end of Virtual City's 9-13% claimed range
- ▶ Average farmer incomes in the four countries range between \$320-\$460
- ▶ Number of farmers increases at the population growth rate
- ▶ Businesses in Senegal, Ghana and Nigeria grow 30% slower than Virtual City did
- ▶ 10% of customers use their records to secure annual input loans
- ▶ Loans only cover 75% of these farmers' total short term financing needs.

SELECTED ANALYSES



PRICE TRANSPARENCY FOR LOCAL AND INTERNATIONAL MARKETS LETS FARMERS FIND THE BEST PRICE FOR THEIR PRODUCE, WITH **MANOBI'S** TIME TO MARKET SERVICE INCREASING GUM PRODUCER INCOMES 40-50%

- ▶ Policymakers should make national public sector agricultural information available and useful digitally.
- ▶ Training programs should partner with private sector firms to create incentives for learning.
- ▶ A credible, comprehensive agricultural development strategy can help businesses understand where the future market opportunities are and create appropriate solutions for them.
- ▶ Eliminating import tariffs on Internet-enabled devices will help decrease the cost of Internet-enabled solutions in agriculture.

CONSIDERATIONS FOR POLICY MAKERS

Source: Dalberg analysis and interviews



02

PROFILE: HEALTH - STRENGTHENING SYSTEMS AND STRIVING FOR SCALE

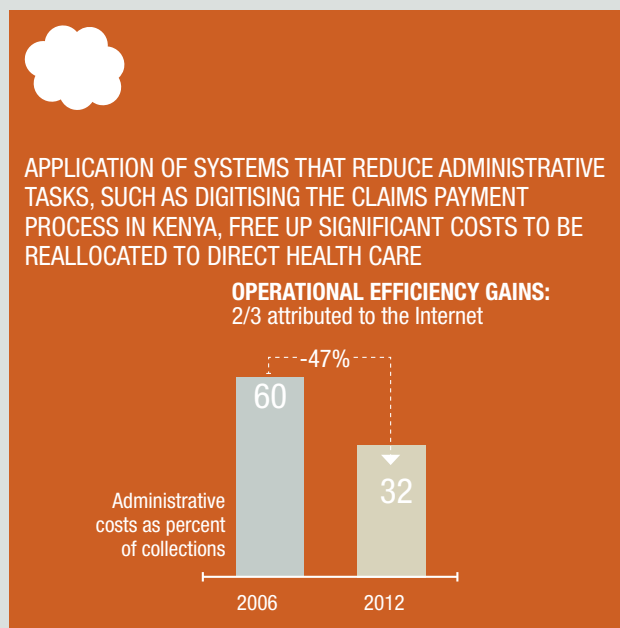
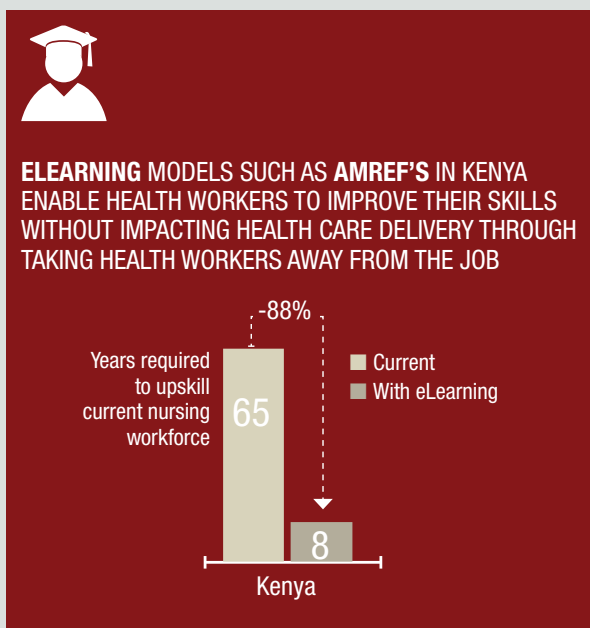
Innovation surrounding Internet-enabled businesses in health is not lacking, however, most of them remain as pilots, with limited evidence of impact on health outcomes. However, a few examples that have transcended to a phase of growth suggest the potential for scale. And, while there is limited evidence of the impact of Internet-enabled solutions on health outcomes, governments are forging ahead to create enabling environments recognising the impact on operational efficiencies and cost savings in service delivery. By developing eHealth policies and strategies, and committing to interoperability, the governments of Kenya and Ghana have helped spur the development of applications that can be integrated onto government platforms. Nigeria and Senegal's eHealth sectors have several pilots in place, but they are yet to be scaled. Policymakers should ensure that there is an eHealth strategy in place, coordinate the various ICT developers that seek to build atop those systems and continue to bring health care administration costs down by encouraging health care providers to adopt networked technology.

FIGURE 3: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES IN HEALTH

DESPITE AN OVERWHELMING NUMBER OF PILOTS AND LIMITED EVIDENCE OF IMPACT, GOVERNMENTS ARE FORGING AHEAD TO CREATE ENABLING ENVIRONMENTS RECOGNISING THE IMPACT ON OPERATIONAL EFFICIENCIES AND COST SAVINGS IN SERVICE DELIVERY



SECTOR INTENSITY



SELECTED ANALYSES

ACCESS TO INFORMATION PARTICULARLY FOR PREGNANT WOMEN HAS THE POTENTIAL TO IMPROVE PRE-NATAL CARE AND ENCOURAGE SAFE DELIVERIES

- ▶ Develop policy and regulatory frameworks that promote national standards. The health sector requires regulatory oversight for many reasons, from clinical protocols to data policies to electronic records management.
- ▶ Act as a first mover by automating health administration and datasets. The use of enterprise solutions and digitization of processes has led to significant cost savings through increased operational efficiency.
- ▶ Coordinate and partner across sectors in order to share information, avoid duplication of applications and investments, and enable the adoption of interoperability standards.

CONSIDERATIONS FOR POLICY MAKERS

Source: Dalberg analysis and interviews



03

PROFILE: EDUCATION - ENABLING THE ECOSYSTEM

Nearly 60% of education organisations surveyed responded that access to the Internet is 'essential' for their work. Further, the rapid reduction in cost of devices, increasingly affordable bandwidth and development of local content are indications of a positive trend towards leveraging technology to support educational outcomes. But despite significant agreement that the Internet and Internet-enabled solutions could be powerful tools for learning, to date, evidence of scale and impact is limited because interventions are small. Yet, notable examples stand out. First, in tertiary education, virtual learning universities are exponentially expanding learning opportunities across the continent. Second, the rapid growth of mobile web and social networking has enabled a surge of access to information outside the classroom. What's needed now are solutions that fully incorporate bandwidth, hardware, software, training – both student and teacher – , content and policies in order to deliver both impact and scale.

FIGURE 4: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES IN EDUCATION

INTERNET-ENABLED SOLUTIONS ARE EXTENDING ACCESS TO INFORMATION BUT DELIVERING AN IMPACT ON UNIVERSAL ACCESS TO EDUCATION REQUIRES A HOLISTIC APPROACH INCLUDING BANDWIDTH, HARDWARE, CONTENT AND SUFFICIENT TRAINING FOR BOTH STUDENTS AND TEACHERS



SECTOR INTENSITY

BINU AND WORLDREADER HAVE TURNED FEATURE PHONES INTO E-READERS WITH ACCESS TO OVER 1 000 BOOKS

PRODUCT RESULTS
Share of Binu respondents sharing their mobile phone for reading with...

Category	Share (%)
Children	6
Parents	10
Siblings	12
Friends	28

On average each phone reaches 1.5 readers

IN JULY 2012, PAGE READS PER MONTH TOTALED **1.2 MILLION** IN GHANA, **10.1 MILLION** IN NIGERIA WITH OVER 190 000 READERS ACROSS AFRICA

WITH **75 000** ENROLLED STUDENTS BUT PHYSICAL CAPACITY FOR JUST **16 000**, DAKAR UNIVERSITY HAS HELPED ADDRESS OVERCROWDING BY INCORPORATING ELEARNING IN PARTNERSHIP WITH THE AFRICAN VIRTUAL UNIVERSITY

SELECTED ANALYSES

- ▶ Education leaders and policymakers must integrate technology projects and policy into the broader transformation of service delivery and national education strategy.
- ▶ Policymakers must continue to recognise the limitations of insufficient infrastructure conditions including affordable and sufficient quality bandwidth, electricity and ICT literacy.
- ▶ Innovators should seek out and emphasise local content.
- ▶ Education leaders should look outside the classroom for solutions that will support access to educational information and resources.

CONSIDERATIONS FOR POLICY MAKERS

Source: Dalberg analysis and interviews



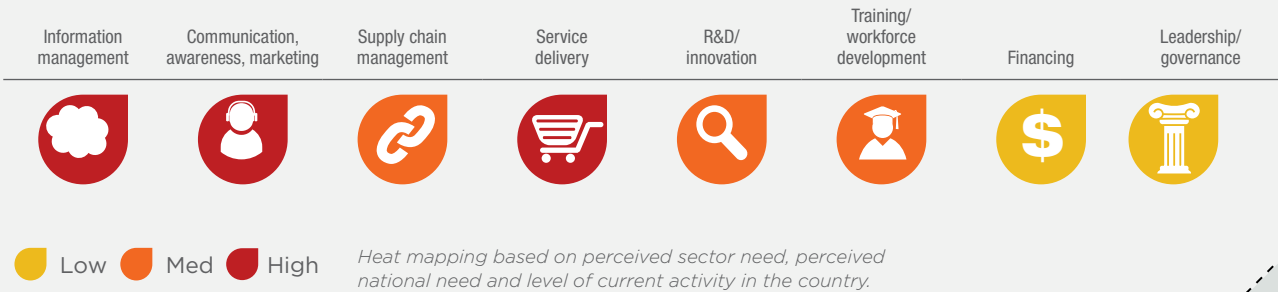
04

PROFILE: SMALL AND MEDIUM ENTERPRISE DEVELOPMENT

More than eight in 10 surveyed SMEs believe taking better advantage of the Internet would improve their businesses' economic performance, and seven in ten of those expect that doing so would create new jobs in their organisation. They have good reason to believe this. The Internet is enabling both top-line growth through marketing and sales, as well as bottom-line growth through increased efficiency in information management. It is enabling entirely new classes of business to emerge, as entrepreneurs develop local content and applications, while helping existing businesses trim costs as information management becomes digitised and networked. Policymakers should boost their small business sectors by helping to smooth the transition from mMoney to eCommerce, continuing to lower bandwidth costs and improve connection quality, and improving business environments.

FIGURE 5: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES FOR SMES¹

THE INTERNET IS BRINGING TOP-LINE GROWTH AND BOTTOM-LINE IMPROVEMENT TO SMALL AND MEDIUM-SIZED ENTERPRISES. THIS CAN BE ACCELERATED THROUGH TARGETED INVESTMENT IN CONDITIONS FOR CLOUD SOLUTIONS



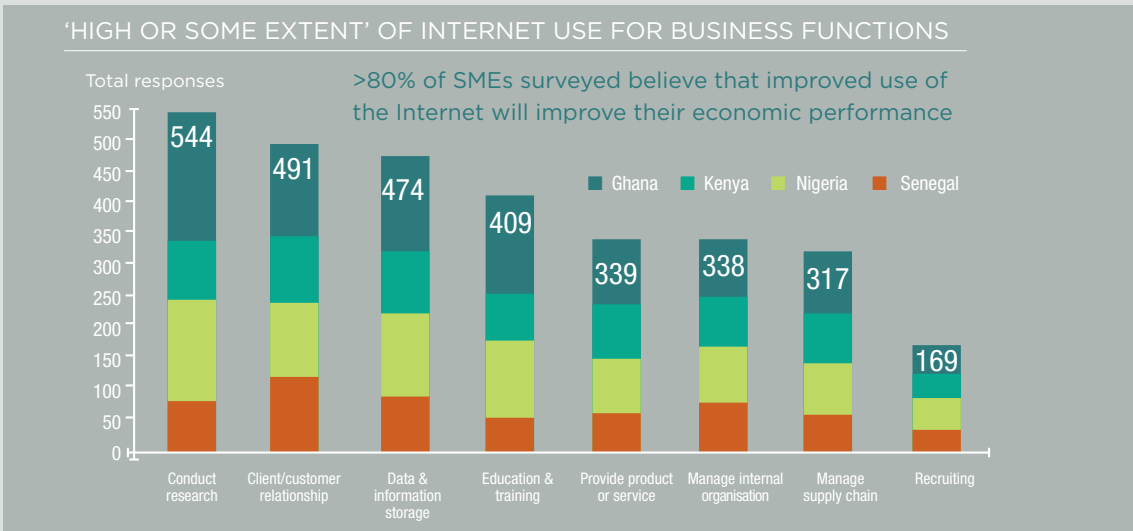
SECTOR INTENSITY

SELECTED ANALYSES

MARKETING AND AWARENESS HAVE DRIVEN SIGNIFICANT BUSINESS GROWTH IN NIGERIA, WHERE THE GET NIGERIAN BUSINESS ONLINE (GNBO) INITIATIVE HAS BROUGHT 25 000 BUSINESSES ONTO THE WEB SINCE 2011

ACCORDING TO INTERVIEWS IN GHANA, ONLINE SALES (ECOMMERCE) ARE GROWING, BUT HINDERED BY THE LACK OF SUPPORT SERVICES SUCH AS DELIVERY SYSTEMS AND ONLINE PAYMENT PLATFORMS.

ACCORDING TO KENYA'S IHUB RESEARCH, A SHIFT TOWARDS MOBILE PHONE BANKING AND PAYMENT SERVICES IS THE KEY TO UNLOCKING OTHER INTERNET SERVICES FOR SMES



- ▶ Policymakers should engage with private sector as the eCommerce and payments ecosystem develops and support space for innovation as eCommerce business models develop.
- ▶ Leaders must ensure that the conditions necessary for cloud computing are integrated into National ICT Strategies in particular, promoting quality, affordable broadband, investing in digital skills and capabilities and ensuring a sound business environment.

- ▶ Policymakers should consider lowering bandwidth costs by convening large telecom companies to set investment strategy and provide subsidies.
- ▶ Governments can play a special role in increasing Internet awareness—and therefore, use of it across sectors—by migrating further toward eGovernment services.

CONSIDERATIONS FOR POLICY MAKERS

¹ Dalberg interviews; Balancing Act Africa "Nigeria: Google Commences Training for 500 Entrepreneurs," August 2012. Heat mapping based on perceived sector need, perceived national need and level of current activity in the country

Source: Dalberg analysis and interviews; Balancing Act Africa "Nigeria: Google Commences Training for 500 Entrepreneurs," August 2012.



05

PROFILE: FINANCE - DEEPENING AND EXTENDING INCLUSION

Mobile and electronic financial solutions have begun to expand beyond transfers and payments to provide a suite of financial services that are driving financial inclusion across Sub-Saharan Africa. Although mobile money (mMoney) is expanding slowly, it has already created significant opportunities for eCommerce and other online transactions. Examples in Ghana and Kenya highlight the potential of the Internet to drive access to a full range of financial services, including insurance, credit and savings for individuals and businesses. Meanwhile, the growth of solutions such as Pagatech and Pesapal illustrate the opportunities for mMoney to drive eCommerce for a broader base of the population. To realise the full potential of Internet-enabled solutions that will drive financial inclusion, policymakers must ensure that eCommerce and mMoney policies converge and create enough space to allow for innovation while protecting consumers.

FIGURE 6: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES FOCUSED ON FINANCIAL INCLUSION

MOBILE AND INTERNET-ENABLED SOLUTIONS ARE DRIVING FINANCIAL INCLUSION BY IMPROVING OPERATIONAL EFFICIENCIES AND EXTENDING A FULL SUITE OF FINANCIAL SERVICES – PAYMENTS, CREDIT, SAVINGS, INSURANCE, TO BOTH INDIVIDUALS AND BUSINESSES



SECTOR INTENSITY

SELECTED ANALYSES

CONSIDERATIONS FOR POLICY MAKERS

MORE THAN 60% OF FINANCIAL ORGANISATIONS SURVEYED VIEW THE INTERNET AS ESSENTIAL, THE SECOND HIGHEST RESPONSE OUT OF ALL INDUSTRIES. DIGITISING CLAIMS PROCESSING FOR KENYA'S NATIONAL HEALTH INSURANCE FUND HAS HELPED LOWER ADMINISTRATIVE COSTS BY 30%

**OPERATIONAL EFFICIENCY GAINS:
2/3 ATTRIBUTED TO THE INTERNET**

Administrative costs as percent of collections

Year	Cost (%)
2006	60
2012	32

CLAIMS PROCESSING 6X FASTER

Weeks taken to pay out claims

Year	Weeks
2006	12
2012	2

KOPO KOPO ENABLES BUSINESSES TO AGGREGATE AND MANAGE TRANSACTION DATA FROM MULTIPLE MOBILE MONEY ACCOUNTS.

WITH 56.3M REGISTERED ACCOUNTS ACROSS EAST AND WEST AFRICA, MMONEY IS STARTING TO CREATE OPPORTUNITIES FOR ECOMMERCE THROUGH SOLUTIONS SUCH AS PESAPAL WHICH ALLOWS MERCHANTS TO RECEIVE PAYMENTS VIA MOBILE MONEY. OZINBOPAY ENABLES MERCHANTS IN WEST AFRICA TO RECEIVE AND MAKE PAYMENTS ONLINE AND OFFLINE VIA MOBILE MONEY.

- ▶ To enable the success of mMoney and eCommerce, governments must not only create legal frameworks for mobile money operators, but also guide banks on integrating mMoney and eCommerce into existing technology systems.
- ▶ Policymakers should promote digitisation and strengthening of citizen identification systems in order to enable the delivery of a broader range of social and commercial services.
- ▶ Public and private sector actors must continuously emphasise connectivity to promote the competitiveness of the ancillary delivery and transport services necessary to foster thriving online commerce.

Source: Dalberg analysis and interviews



06

PROFILE: ENERGY AND TRANSPORT – EXTENDING ACCESS OFF-GRID

Based on survey data and interviews with experts, Internet solutions have generated little within the energy and transport sectors in our focus countries, but two types of solutions offer potential. Citywide traffic monitoring can help governments allocate traffic police. By easing installment payments, mMoney can ease asset financing for solar equipment in unelectrified rural areas. The former requires significant government involvement, while private sector could drive the latter, once the government has sufficient legal protection for mMoney.

FIGURE 7: IMPACT INTENSITY AND FUTURE POTENTIAL FOR INTERNET-ENABLED SERVICES IN ENERGY AND TRANSPORT

BY EASING INSTALLMENT PAYMENTS AND MONITORING USAGE, INTERNET-ENABLED SOLUTIONS HAVE THE POTENTIAL TO INCREASE ACCESS TO AND REDUCE EXPENDITURE ON ENERGY



AN EMERGING MODEL IN KENYA, M-KOPA, IS EXTENDING FINANCING FOR OFF-GRID SOLAR ELECTRIFICATION IN PARTNERSHIP WITH SAFARICOM'S M-PESA AND HAS SHOWN RAPID SALES SINCE COMING TO MARKET

SOCIOECONOMIC IMPACTS: DAILY EXPENDITURE ON POWER NEARLY HALVES, IN KENYAN SHILLINGS

Energy Source	Cost (Kenyan Shillings)
Kerosene	70
M-Kopa	40

Cost of phone charging and kerosene to off-grid households

43% reduction in cost from Kerosene to M-Kopa.

MULTIPLE MOBILE APPLICATIONS HAVE EMERGED IN KENYA AND NAIROBI THAT CROWD SOURCE TRAFFIC INFORMATION TO ALLOW INDIVIDUALS TO SELECT MORE EFFICIENT ROUTES, SYSTEMICALLY HELPING RELIEVE CONGESTION

IN ALL FOUR COUNTRIES CONSUMERS CAN VIEW THEIR ELECTRICITY BILLS ONLINE, IN SENEGAL AND KENYA CUSTOMERS CAN ALSO IMMEDIATELY PAY THEM ONLINE

- Policymakers should ensure that mMoney can be used for commercial transactions rather than just person-to-person transactions. Continued use and promotion of online payments could both increase revenue for government while reducing costs (through convenience) for citizens.
- By aggregating public data and making it widely available to developers, government

can spur the growth of applications that will improve the use of public services. E.g. government can improve the use of existing roads by collecting traffic data and making it available to developers.

- Governments should use their leverage to engage telecom companies in the fight against traffic jams.

Source: Dalberg analysis and interviews; www.businessweek.com/news/2012-10-04/kenya-s-m-kopa-offers-cheaper-solar-power-to-off-grid-villages



07

PROFILE: GOVERNANCE – ACCOUNTABILITY, TRANSPARENCY, EFFICIENCY

Each of the focus countries has begun to recognise the Internet's potential to reduce the cost of governance and improve transparency, accountability and citizen engagement. eGovernment initiatives have been funded by both governments and external donors, and have seen particular success in Kenya, through the leadership of the Permanent Secretary of the Ministry of Information and Communications and the Kenya ICT Board. Outsourcing eGovernment services to the private sector has been limited but also shows significant potential. eGovernment initiatives are most effective when a mandate to initiate, coordinate and develop eGovernment services is clearly issued to an agency with executive authority.

FIGURE 8: IMPACT INTENSITY AND POTENTIAL OF INTERNET-ENABLED SERVICES FOCUSED ON GOVERNANCE

INTERNET-ENABLED SOLUTIONS ARE ALREADY IMPROVING ADMINISTRATION AND THE PROMOTION OF OPEN DATA AND PUBLIC PRIVATE PARTNERSHIPS CAN ACCELERATE AND EXTEND SERVICE DELIVERY



SECTOR INTENSITY

SELECTED ANALYSES

CONSIDERATIONS FOR POLICY MAKERS

SYSTEMS CAN REDUCE ADMINISTRATIVE TASKS AND ENABLE THE SHARING OF INFORMATION BETWEEN DIFFERENT GOVERNMENT AGENCIES, AS PER THE GAINDE 2 000 SINGLE WINDOW CUSTOMS CLEARANCE

Time required to gather customs forms

Year	Days
2004	4.0
2008	0.5

Total days spent clearing goods

Category	2010 (Days)	2011 (Days)
Imports	18	14
Exports	14	11

THE KENYA REVENUE AUTHORITY REQUIRES THAT ALL CITIZENS TURNING 18 REGISTER FOR A TAX IDENTIFICATION NUMBER ONLINE, GIVING THEM NO OPTION TO USE A PAPER-BASED SYSTEM

OPEN DATA INITIATIVES ENABLE THE TECHNOLOGY ECOSYSTEM TO CREATE LOCAL SOLUTIONS TO LOCAL DEVELOPMENT CHALLENGES

- ▶ Leaders should seek to drive clear eGovernment mandates with the executive authority to speed the rollout of services. Initiatives appear most effective when implementation responsibility is assigned to an agency with executive authority to drive implementation.
- ▶ Policymakers and other stakeholders should promote access to ICT education. Getting the population online to access government services requires a parallel programme of ICT education, both within government and for new users.

- ▶ Policymakers must make clear but careful decision about data collection and publication. Open data initiatives require making hard decisions about how much data to publish and require clear processes and procedures for data collection, management and use. But the reward is great because access to larger and stronger datasets can also spur innovation in solution development.

Source: Dalberg analysis and interviews





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