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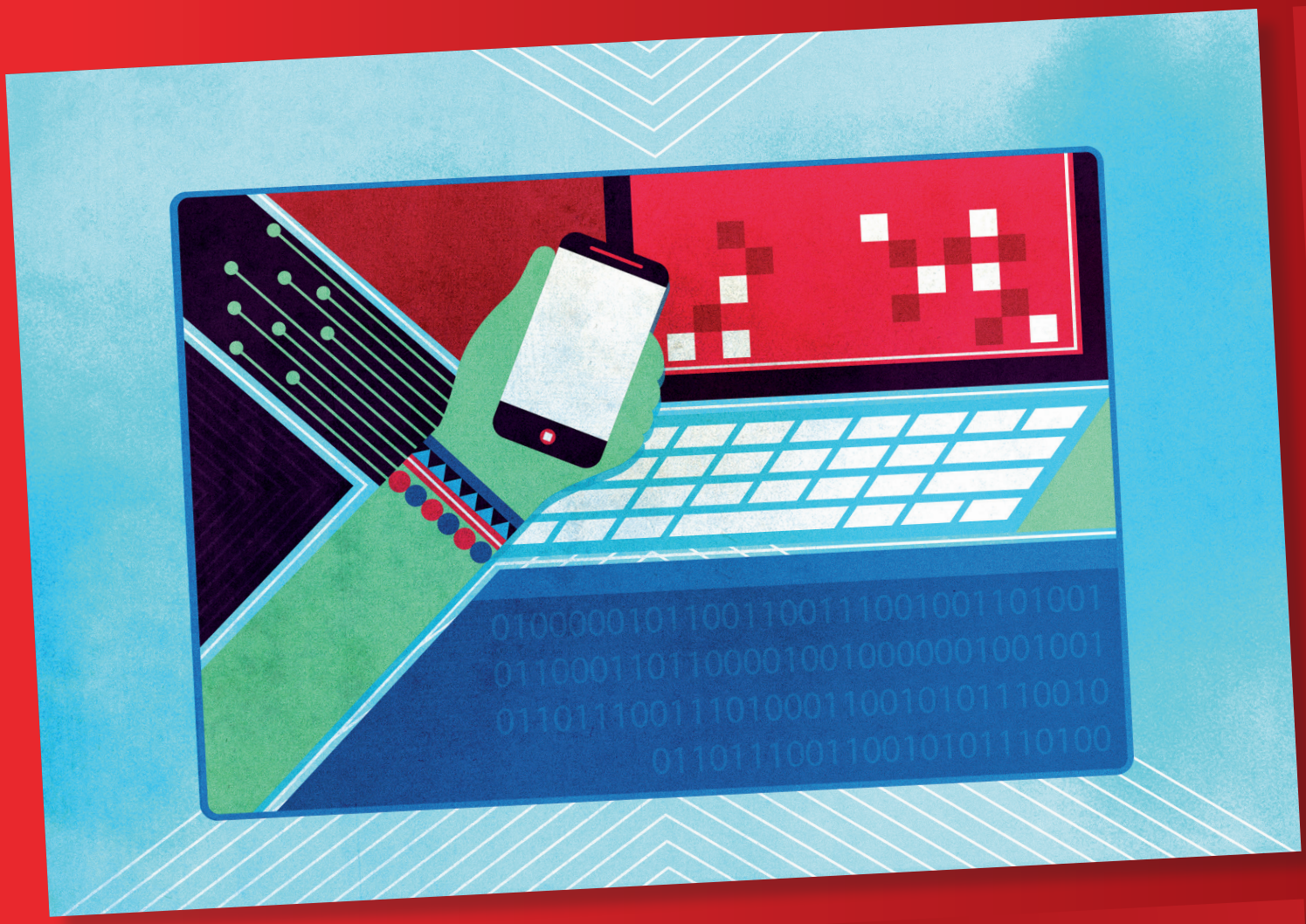


06 Digital divide: The impact of closing Africa's Internet gap

By: Armando Cabral /// Lohini Moodley /// Safroadu Yeboah-Amankwah

Africa is still starting its Internet journey, lagging behind emerging markets in Asia and South America in Internet-based GDP, but a focused strategy could yield massive social and economic gains.

The Internet exerts substantial influence on economic growth and enables transformations in both the public and the private sector – for all types of organizations, not just for online players – and regardless of an organization's size. Among small and medium-sized businesses (SMBs), for instance, 75 percent of the Internet's economic impact can be attributed to companies that are not pure Internet players. These businesses have benefited from the higher productivity that the Internet enables. In a global survey of 4,800 SMBs, McKinsey found out that companies utilizing the Internet grew more than twice as fast as those with a minimal Web presence.

One index of the Internet's impact on growth is iGDP – the Internet's share of gross domestic product (see text box, page 40). In the world's developed economies, the Internet already contributes more than 20 percent of GDP growth. But this growth is by no means limited to the mature economies of the West. In China, India, and Brazil, the Internet has accounted for more than 10 percent of total GDP growth over the past five years, and its impact is rapidly increasing. Conspicuously dwarfed by the world's climbing iGDP, however, is the continent of Africa.

Over the most recent decade, Africa has made remarkable strides in its economic development – with GDP growth rates among the highest in the world, rapid urbanization and expansion in consumer spending power, and unprecedented business interest and investment. Despite these optimistic signs, however, Africa has lagged behind the rest of the world in Internet adoption. Per capita spending on information and communications technology (ICT) is a mere fraction of that in other parts of the world, and only 16 percent of Africa's one billion people are Internet users.

Africa in the global Internet economy

While most other regions have undergone a boom in Internet adoption and considerable Internet-related growth over the past decade, Africa has trailed behind. McKinsey analysis shows that Africa's iGDP amounts to just 1.1 percent of GDP – half the iGDP of other developing countries and less than a third of the average developed country's iGDP of 3.7 percent. If Africa could close this gap, the impact on GDP, business growth, and social outcomes would be massive.

More specifically, McKinsey assessed the iGDP of the 14 countries that together account for 90 percent of Africa's GDP and found significant variation among them. Senegal's iGDP stands at 3.3 percent and Kenya's at 2.9 percent – a level comparable to that of France and Germany. Ethiopia's iGDP, by contrast, is only 0.6 percent (Exhibit 1).

In dollar terms, Africa's iGDP is estimated at USD 18.0 to 18.5 billion – a fraction of that in other emerging economies. Two-thirds of this total is made up by private consumption of Internet-related services and equipment, including smartphones. Public expenditure on the Internet – including digitization of education and health services – currently amounts to only USD 2 billion. Private investment in infrastructure and digitization generates a further USD 2 billion, while the positive trade balance created by business process outsourcing (BPO) accounts for the remaining USD 2 billion.

The Internet's contribution to GDP in Africa averages just 1.1 percent, half that of other emerging economies

McKinsey's iGDP methodology

First presented at the 2011 eG8 Forum, McKinsey's iGDP methodology is a quantitative approach to evaluating the Internet's economic contribution. To measure the Internet's impact on a country's economy – that country's iGDP in other words – the methodology uses the expenditure method of calculating GDP, assessing all the activities linked to both the creation and use of Internet networks as well as Internet services. These include:

- Private consumption – the total consumption of goods and services by consumers via the Internet or needed to obtain Internet access
- Public expenditure – Internet spending for consumption and investment by the government, across software, hardware, services, and telecoms
- Private investment – in Internet-related technologies, including telecoms, extranets, intranets, and Web sites as well as in infrastructure
- Trade balance – including business process outsourcing, e-commerce, and exports of goods, services, and Internet equipment, from which all associated imports are deducted.

However, the composition of iGDP varies across the sample, illustrating the different paths that countries have followed. Private consumption dominates across all countries except Morocco, where the trade balance is the largest element as a result of its BPO industry. Despite this being the largest factor in all the remaining countries, private consumption plays a particularly important role in Mozambique, Ethiopia, the Ivory Coast, Cameroon, Senegal, Kenya, and Ghana, accounting for more than 85 percent of iGDP. With around 25 percent of iGDP, Nigeria stands out in terms of its public expenditure as a result of e-government initiatives. Egypt shows relatively high private investment, generating 23 percent of its iGDP. The composition of iGDP highlights potential opportunities for growth.

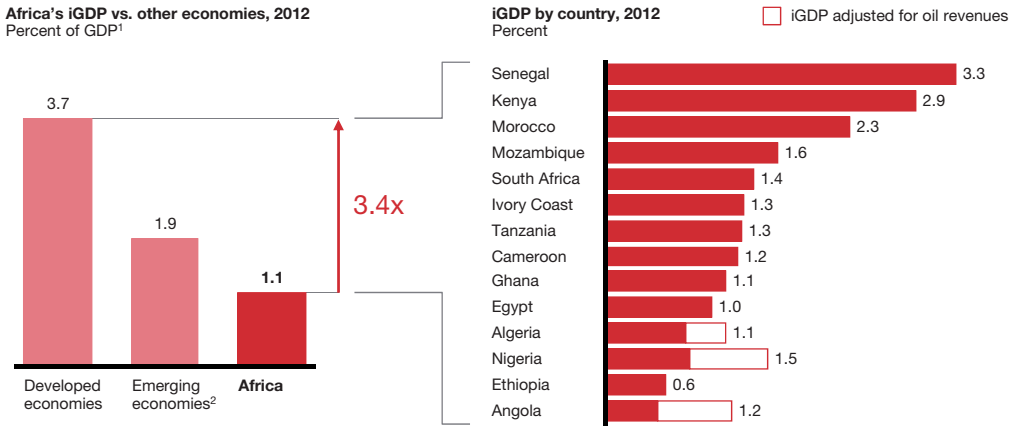
Specific steps that African countries need to take to unlock the Internet's tremendous economic potential vary considerably and depend on each country's starting point. Some African countries are much further along the path of Internet-driven growth than others. McKinsey's Internet Five Foundations (i5F) index assesses the vibrancy of a country's Internet ecosystem (see text box, page 43).

Africa's Internet potential

McKinsey's analysis suggests that the growth of the Internet could result in massive economic impact in Africa. The continent-wide connectivity rate is quite low, but Internet usage in urban areas is indicative of the online potential: around 25 percent of Africa's urban population goes online daily, led by Kenyans at 47 percent and Senegalese at 34 percent. If the right conditions are met, Africa's iGDP should at least reach that of leading economies such as Taiwan, United Kingdom, and Sweden (5 to 6 percent). If, however, the Internet were to follow a path similar to mobile telecoms in Africa, iGDP could account for as much as 10 percent of total GDP by 2025 (Exhibit 2) – or more than USD 300 billion, roughly the size of Nigeria's economy today. In this scenario, increased Internet penetration and use could

If the Internet's impact in Africa is as big as mobile voice's, iGDP could jump to 10 percent or more than USD 300 billion

Africa as a whole lags behind other emerging markets on iGDP, but there is a wide spectrum among the countries



1 GDP assessed by expenditure method, with a share of each category attributed to the Internet
2 Emerging economies data is from 2010

SOURCE: McKinsey Global Institute analysis

Exhibit 1

prompt private consumption to grow 13 times to over USD 154 billion – and the amount spent on Internet access and use alone could increase from USD 5.7 billion today to USD 35 billion in 2025. E-commerce activity could generate revenues of USD 75 billion if 10 percent of retail spending in Africa's largest economies were to move online, analogous to the levels where developed economies are today.

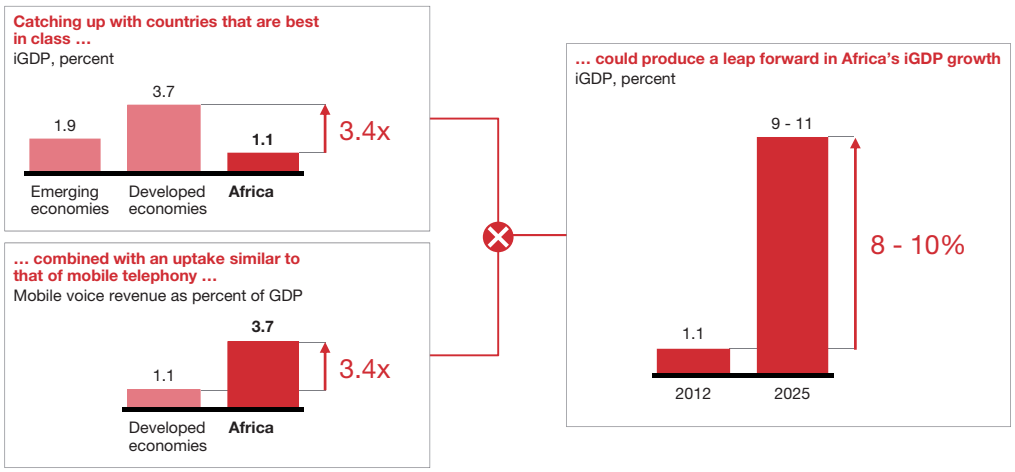
Five major trends fuel Internet demand in Africa and increase the likelihood of economic transformation:

Youth and urbanization. The African continent is home to more than 200 million people between the ages of 15 and 25 – the cohort that uses technology the most. This demographic shift will create millions of new Internet users in the coming decade. And as Africa continues to urbanize, incomes are rising. According to McKinsey research, some 128 million households are projected to have significant discretionary income by 2020.

Cheaper devices. Basic smartphone prices have fallen below the critical threshold of USD 100 per unit, and this trend is likely to continue. As a result, Africa's smartphone penetration could rise from 2 to 5 percent today to 50 percent in some countries and 30 percent overall. PC, laptop, and tablet penetration could double to 40 percent, again equating to nearly 300 million additional devices sold. This continued growth will be driven by declining costs and the introduction of durable, affordable, and locally designed products such as Veda laptops, Netsurfer tablets, and Mi-Fone and VMK mobile phones.

Government initiatives and business uptake. Many countries are moving processes such as benefit payments, tax filing, and passport applications online, and efforts are gearing up to digitize education, health, and public services. Ambitious ICT infrastructure is being planned across the continent, such as Morocco's Maroc Telecom's investment of USD 1.2 billion to upgrade its network and install fiber optics nationwide. Unitel is also investing in modernizing its network in Angola, and Smile Telecoms is rolling out 4G coverage in multiple countries. On the business side, many companies are beginning to exploit the Internet to reduce costs

Effective government-business collaboration could drive the Internet's contribution in Africa to 10 percent by 2025



SOURCE: McKinsey Global Institute analysis

Exhibit 2

and drive sales. The airline industry is embracing online check-in and e-ticketing, for instance, while banks are promoting online services and developing mobile microfinance products.

Growing trade. Business process outsourcing, software development, and local hardware manufacturing could all contribute to increasing Africa's trade balance, which is currently positive and could grow to USD 13 billion. In South Africa, BPO already generates more than USD 1.5 billion in revenues and directly accounts for 54,000 jobs. Morocco's BPO sector is at similar scale. Ghana, Kenya, Nigeria, and Senegal are among the countries with plans and potential to build their own BPO sectors. Some low-cost devices are already being manufactured on the continent, particularly in Nigeria and South Africa, and there are a number of software development hubs.

Innovation and entrepreneurship. As the Internet expands across Africa, it has become a launching pad for a new generation of digital entrepreneurs. In Nigeria, Konga and Jumia have become online retailers, and in Mozambique, a start-up called moWoza has created a more efficient supply chain by using text messaging and a smartphone app to deploy available taxi drivers to deliver parcels from wholesalers to informal traders. ReKindle Learning, a South African start-up, is developing personalized, interactive learning tools that work on simple mobile devices. Success stories like these are attracting global investors and spurring the formation of local angel investor and venture capital networks. Incubators are also springing up across the continent, from Kenya's iHub to South Africa's JoziHub to Cameroon's ActivSpaces. Nigeria has produced two notable examples: the Co-Creation Hub (or CcHub) and the Wennovation Hub. Microsoft recently announced a partnership with three leading African incubators to support start-ups. Many of Africa's start-ups are not just focused on local opportunities but are "micro-multinationals" – small businesses utilizing technology and the Internet to access customers and suppliers globally.

The paradox of the Internet's potential in Africa is that the transformative effect on the continent would be far greater than that in developed countries. Examples include the financial services

Five Foundations for unlocking the Internet's full potential

For a country to unlock the Internet's full economic potential, five foundations must be in place. McKinsey's i5F index assesses the strength of each these foundations in a particular country, generating an overall score for the country's Internet readiness – a score that correlates closely with current iGDP.

- Government prioritization and support – including a clearly articulated ICT strategy and creation of a regulatory environment that favors infrastructure investment
- Infrastructure – including electricity supply and the availability of secure Internet servers
- Business environment – including business-friendly regulation and effective competition policy
- Financial capital – including access to loans, venture capital, and equity financing
- Human capital – sufficient qualified professionals in both the private and public sectors, dependent on factors such as the enrollment rate in tertiary education.

and the healthcare sectors. While Africa's consumers are significantly under-banked and access to health services is extremely limited, the Internet could propel African countries past the delivery systems typical in most developed economies. This leapfrogging could make mobile banking and e-learning – among other Internet-enabled systems – the actual dominant mode of service delivery in Africa.

The Internet's impact in key sectors of Africa's economy

It is estimated that Internet technologies would result in productivity gains or benefits of USD 150 to 300 billion across key sectors of African economies including government. Despite its ability to be a rising tide that lifts all boats, the Internet is likely to have particularly profound impact on six sectors due to the relative ease of implementation in these sectors and the size of the population they reach.

Financial services. The Internet is likely to be a huge accelerator of financial inclusion. More than 60 percent of Africans could be banked by 2025, with more than 90 percent using mobile wallets for daily transactions and payments. The value of mobile financial services could increase from less than USD 1 billion today to USD 19 billion in 2025. In addition to increased revenue, productivity gains in the sector are estimated to be USD 8 to 10 billion.

Education. New digital tools have the potential to deliver rapid gains in access to education, teacher training, and learning outcomes. Students who once had few textbooks can log on and learn with the world's best educational content on affordable tablets or e-books, while teachers will have access to better training. Education spending accounts for a sizable portion of most government budgets, and now Web-based school management systems and online testing can support standardization and school performance monitoring that will make this public expenditure more effective. The technology-related productivity gains in education could reach USD 30 billion to almost USD 70 billion – enabling governments to achieve more with their education budgets and providing millions of students with the foundation for a better future.

Healthcare. Today, Africa has only 1.1 doctors and 2.7 nurses per 1,000 people, and many people travel long distances for treatment and

care. Remote diagnostics and telemedicine could address 80 percent of patient health issues in rural clinics, which are typically the most poorly staffed. The Internet could also improve the efficiency of health spending – reducing the cost of treating chronic disease by 10 to 20 percent. In fact, technology-related benefits for healthcare are estimated to be USD 84 to 188 billion. The investment in these systems itself will represent a significant contribution to iGDP, but the broader social and economic impact of improved health outcomes will be far greater.

Retail. Today, the formal retail sector is relatively underdeveloped across most of the continent, outside of South Africa. But e-commerce will open up a new shopping experience for Africa's growing middle class, giving consumers more choice, better quality and convenience, and lower prices, possibly unlocking incremental demand. By 2025, e-commerce could account for 10 percent of retail sales in Africa's largest economies, which would translate into some USD 75 billion in annual online sales. At the same time, the Internet will enable substantial productivity and efficiency gains, including cost savings, strengthened supply chains, and digitized payment collection. Technology-related productivity gains in this sector are estimated to be USD 16 to 23 billion.

Agriculture. Growth from agriculture is at least twice as effective in reducing poverty as growth in other sectors. Huge efforts are under way across the continent to drive agriculture's output, value, and social impact – and the Internet has the potential to accelerate these efforts. It can connect farmers with expertise and information on everything from weather, crop selection, and pest control to management and finance. It can also improve their access to markets and increase their pricing power. As they go online, agricultural exchanges are gaining in breadth and sophistication. The East Africa Exchange, for example, provides a virtual trading platform along with support services and market intelligence. Nigeria has used mobile technology to revamp its system for delivering fertilizer subsidies. All in all, Internet technology can be the engine to drive up to USD 3 billion in annual productivity gains in the sector.

Government. The Internet is a powerful tool that improves transparency, provides citizens with information, and automates revenue collection. By 2025, half or even more than half of all government departments in Africa could have automated information systems – and all customer-facing government departments could have an online presence, allowing citizens to access services at the touch of a button. Potential technology-related productivity gains in government are estimated to be USD 10 to 25 billion, enabling more effective service delivery.

Unlocking the Internet's full potential in Africa

The specific actions that countries need to take depend on their current situation, but what applies generally is the need to strengthen the foundations of human capital and infrastructure. Several specific areas for action apply to African policy makers and business leaders.

Government initiatives. All 14 African countries in McKinsey's sample have singled out Internet development as a priority, but not all have been systematic in their approaches or successful in translating their objectives into GDP impact. In the i5F index, most countries scored above 40 percent for their national ICT strategy, but the leaders on this dimension were Senegal (68 percent) and Kenya (59 percent), pointing to the important role that government can play in developing the ICT sector on the African continent.

Several key elements determine a government's ability to successfully support the Internet's development. A country will initially need a coordinated national vision driven by a strong champion in a role similar to a chief information officer. The government should collaborate with the private sector and have a strategy in place to generate demand, support access expansion, and ensure

commitment to building ICT capabilities. In addition to this, governments should also allocate resources and funding to implement their ICT strategies effectively. Potential sources of funding include increased revenue collection as a result of tax return e-filing, productivity gains from digitizing government processes, or redirecting existing spending as services migrate – e.g., replacing spending on textbooks with spending on e-readers and online content.

Private sector opportunities. Internet growth in Africa opens the door for established companies to expand their reach and add new business lines. The Internet gives start-ups the ability to scale up rapidly, and some may be sources of low-cost innovation that can disrupt entire industries. Multinationals also increasingly realize that Africa's growing Internet penetration presents an opportunity to reach untapped markets. If local companies do not innovate quickly, they could lose out to multinationals that import solutions. For foreign companies, the challenge will be tailoring their offerings to the needs of Africa's diverse markets and competing with businesses that understand the local context and how to operate in it. Spotting gaps in the market and moving decisively will prove critical, since first movers are likely to gain a significant advantage.

Large telecoms operators will need to prepare for a pronounced migration from voice to data. They can create consumer demand by pushing for low-end smartphones, providing transparent entry-level pricing, improving the network experience, educating customers on the utility of the Internet, and ensuring that setup is hassle-free. There will also be further opportunities to leverage the mobile network to deliver ICT services to business customers. More broadly, telecoms operators and technology companies can partner with governments or with other enterprises to drive the digital revolution. Public-private partnerships could make strides in delivering infrastructure, developing ICT capabilities, or delivering e-government, education, and health services. Companies from different sectors may need to collaborate to deliver new products and services. Banks and telecoms operators, for instance, have partnered to provide mobile financial services.

Entrepreneurs are an important force in the Internet ecosystem – and they have a number of opportunities within the ICT sector and across the broader economy. But even though the Internet dramatically reduces the time and cost of launching a new enterprise, the key to success is building a compelling value proposition and a well-crafted market entry strategy. To navigate these challenges and access funding, entrepreneurs can turn to the networks and support structures that are emerging across the continent – including incubator hubs and angel networks– as Africa builds up its tech community.

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Despite a slow start, Africa's digital development is now accelerating. As the continent grows more connected, it is already producing innovative Web-based applications and dynamic new business models. Today, Africa still lags behind other regions, but if it can bring Internet-related investment, adoption, and use up to the levels of other regions, the prize will be huge. For now, the Internet in Africa remains a wide-open space where companies and entrepreneurs can capture large opportunities if they are willing to move both rapidly and decisively. And most exciting of all are the possibilities for using the Internet to revamp the delivery of education, health, and other public services – transforming lives in the process.

Armando Cabral
is a Director in McKinsey's Lisbon office.
armando_cabral@mckinsey.com

Lohini Moodley
is a Principal in McKinsey's Johannesburg office.
lohini_moodley@mckinsey.com

Safroadu Yeboah-Amankwah
is a Director in McKinsey's Johannesburg office.
safroadu_yeboah-amankwah@mckinsey.com