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Transformation-Ready:

Using ICT to Fast-Track Africa's Development Path



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Connectivity on the Rise But an Unfinished Agenda

Africa's growth performance has improved remarkably during the last decade. One of the key contributors to this impressive progress has been the role of Information and Communication Technologies (ICT), which are creating new business and investment opportunities for national and regional economic development. Mobile technology innovations and the widespread liberalization of telecommunications markets have stimulated over US\$56 billion in private sector investment in the continent between 1998 and 2008¹ and led to an unprecedented increase in access to telephone services. Africa has become the fastest growing region in the global cellular market, going from less than 2 million mobile phones in use in 1998 to over 400 million today. More than 65 percent of the population now lives within reach of wireless a voice network, up from less than 1 percent ten years ago.



Despite the impressive growth of the sector, African countries face considerable challenges in providing access to high speed Internet for the nearly one billion people on the continent. Connectivity gaps at international, regional, national and rural levels still exist, and lack of competitive access to submarine cables keeps the price of international voice calls and Internet connectivity high.

Getting the environment right for the private sector participation and sound competition remains the most important and unfinished agenda.

¹ Total investment amount in mobile sector between 1998-2008 in Africa (including northern African countries). Source: World Bank PPI database

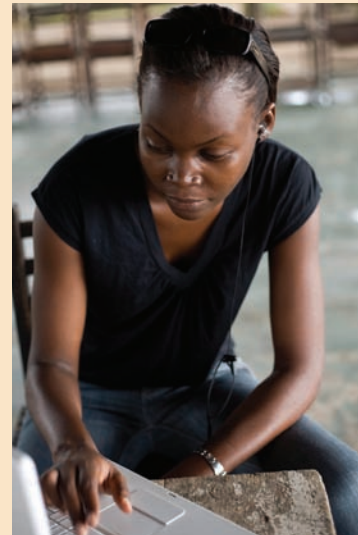
We Believe in **Universal Connectivity**

With the right enabling environment, the private sector could extend voice service coverage to 95 percent of the population and basic Internet coverage to 89 percent. Extending the coverage of wireless networks to make basic voice and basic Internet available to the entire population in sub-Saharan Africa would require US\$17 billion investment over the next ten years. The private sector could account for close to US\$12 billion².

In order to achieve more than basic internet coverage (i.e mass market high-speed Internet access at affordable prices), significant additional public investment through public private partnership arrangements would be needed to complement private sector investments.

Providing the right enabling environment can notably include:

- Completing the reform agenda by establishing full competition throughout the sector.
- Revising the licensing framework to accommodate rapid technological change and emerging competition.
- Reforming the state-owned enterprises (SOEs) that hinder sector growth and development.
- Promoting sound and predictable level of direct and indirect taxation of the sector.
- Ensuring low-cost international access infrastructure by preventing monopoly control over bottleneck facilities.
- Promoting the development of high-bandwidth backbone infrastructure.
- Stimulating innovation in the use of wireless technologies by reforming radio spectrum allocation mechanism and management.



Transformation-Ready: Using ICT to **Fast-Track Africa's Development Path**

The evidence of ICTs' impact on a country's economy and growth is becoming increasingly clear. Recent World Bank research shows that a 10 percent increase in mobile phone subscribers leads to a 0.8 percent increase in economic growth. Similarly, a 10 percent increase in high-speed Internet connections leads to a 1.3 percent increase in economic growth.

Innovations in data access using ICT are already transforming the way many Africans are conducting business, and government delivering services. With continued increases in access to high-speed communications, the transformative nature of these advances will continue to spread across Africa.

ICT is now used in many more ways than before and fundamentally affects people's everyday lives. Governments are becoming more efficient and transparent by offering information and services online. Access to global knowledge has the promise to unleash the power of human capital, stimulate innovation, and offer equity and inclusion, as well as provide opportunities to all segments of society.

Africa is Transformation-ready and new and innovative technologies are helping change the development paradigm.

Read about how citizens, farmers, entrepreneurs, teachers and governments are using Information and Communications Technologies to transform Africa.

² Source: Africa Infrastructure Country Diagnostic (AICD) Report, 2010, Chapter 7 - *ICT: A Boost for African Growth*



Using ICT to Transform Agriculture

Agriculture has always been an information-intensive sector. Access to phones and Internet can facilitate effective dissemination of information on planting and crop management, disease and pest control, veterinary care and other related issues. Providing useful knowledge to farmers and merchants through ICTs can improve and ensure their yields, supply chain, and consequently, income levels. This is even more essential for smallholder farmers who face higher information costs, both as producers and sellers, as a result of their typically greater isolation and the poor state of rural information and communication infrastructure. A number of countries are beginning to see the positive impact of ICTs. For example, between 2001 and 2006, the presence of cell phones in Niger was associated with a four percent reduction in consumer grain prices and a 29 percent increase in traders' profits as compared to non-cell phone markets. In Uganda, farmers are accessing weather and market price information using mobile phone text messaging. At a more advanced level, availability of tailored ICT-based services can provide commercial farmers with tools to participate in an increasingly globalized food market which have opened both new market opportunities and challenges, especially for Africa.

- National agricultural information systems are bringing relevant research and extension information to local users at the national level and supported with ICT.
- Price information systems are facilitating dissemination of accurate and up-to-date price information to farmers with dramatic impacts on their negotiating positions and incomes.
- Through ICT, farmers are improving their livelihoods by increased access to potential markets, awareness among producers on consumer trends, new production techniques, or by providing technical information to farmers to assist them in meeting quality standards.

Kenya Agricultural Commodity Exchange

The Kenya Agricultural Commodity exchange (KACE), a private sector-led initiative, is leveraging the widespread use of cell phones to help farmers get more value for their products by providing daily agricultural commodity prices and extension service messages via SMS (SMS Sokoni).

Farmers have experienced up to 70 percent increase in income.



Ghana Community Network: GCNET

GCNET, a customs and trade facilitation e-government application taken up in partnership with the private sector is arguably one of the most successful electronic applications in Africa, and demonstrates the potential for using PPPs for advancing e-government. GCNet is a joint venture with the two major partners being the Customs Department and a Swiss company Societe Generale de Surveillance. The Customs Department contributed \$1 million towards equity while the balance equity of \$4.3 million came from the private sector. GCNet has achieved demonstrable success with customs revenues increasing by 49% in the first 18 months and the time taken for customs clearances coming down from 6 days to under 4 hours at the Accra Airport.

Increasing Government Efficiency and Transparency Through ICT

Governments across Africa are utilizing ICTs as a tool to modernize government and increase accountability, transparency and efficiency through systematizing and streamlining administrative workflows and creating common depositories of information and data with electronic means.

The impact of ICT applications on productivity and efficiency of public services has been striking in a number of African countries. The Tanzania Revenue Authority's (TRA), for example, embraced transformation with the introduction electronic systems which has helped the government increase tax revenues without increasing tax rates and enhanced the efficiency and effectiveness of the country's administration. Domestic revenue mobilization has increased from 11% of GDP in 2003 to 17% in 2008.



Banking the Unbanked

Banking via cell phone in Africa is easily one of the most significant developments in the continent's recent history. Several recent innovations have been developed by the private sector in Africa to address the unmet demand for reliable financial services for the poor.

WIZZIT is one such 'virtual bank' in South Africa that has capitalized on the mobile platform to reach the 'unbankable'. To reach its customers, WIZZIT has adopted a unique direct sales approach, employing nearly 2,000 previously unemployed WIZZkids with good local knowledge and contacts in the neighborhoods where they operate. Its services can be used with any mobile phone from all operators.

Similar initiatives in Africa, such as Safaricom's M-Pesa in Kenya or MAP Mobile banking solution in Uganda have revolutionized banking in these countries. Both are bringing to the unbanked and under-banked. These innovative solutions offer mobile phone users the opportunity for person-to-person and bill/loan payments. The value of person-to-person transactions via M-Pesa reached over US\$300 million per month in September 2009 and just under 8 million registered users. In Uganda, 350,000 have new bank accounts due to MAP services.

The success of these investments has provided the ground for rival services across Africa and the incentive for banking to reach out to the under-served.





ICT-enabled Incubators Transform Business Ideas into Reality

The spirit of innovation and entrepreneurship thrives in Africa just as it does anywhere else in the world. However, the vast majority of small businesses created by entrepreneurs fail in their first year. African governments are beginning to recognize the important development contributions made through innovation and entrepreneurship and are focusing on ICT-enabled business incubation initiatives as a critical tool to African innovators.



Business incubators provide protected environments for business start-ups. One of the small businesses that has benefited from the services of a business incubator is Equinox Intercom in Ghana. Started in 2006, Equinox Intercom offers the software application “eCampus” to educational institutions to build and manage online courses and collaborative activities. The company now employs eight people, and its software is translated into 35 languages. Equinox CEO Cecil Nutakor says, *“my business would have died out or be struggling to gain momentum if we did not join the incubator in 2006.”*

In Senegal, Mina Production, a sewing and dyeing enterprise incubated at the National Council of Negro Women, is benefiting from access to office space and modern office equipment, as well as training in management, accounting, marketing, computer software and weekly coaching sessions. Mina Production owner Aminata Diop says, *“We realized that before the incubation, we operated in the dark, we were making money on a daily basis, but we have never operated as an organized business. Incubation helped us be visible through Internet, for the first time we have a free space on Internet where we are displaying our products.”*



Learning and Teaching with ICT

Innovations in technology have led to an increased use of ICTs in all sectors – and education is no exception. Just as cell phones have leapfrogged fixed line technology in the telecommunications industry, mobile devices with internet access and computing capabilities are impacting the learning and teaching experiences in African classrooms.

Although at present a small percentage are benefiting from online learning due to high cost of bandwidth, institutions and governments have come up with innovative ways to provide Internet connection. One of the largest initiatives, the New Partnership for Africa's Development (NEPAD) e-Schools Initiative, led by African Heads of State and the African Union, it is providing to all African schools with ICT tools to ensure that young graduates have the requisite skills to fully participate in the information society and knowledge economy.

In Rwanda, to support its vision to produce 50,000 computer programmers—the country's needs by 2020—the government wants every child in the country between the ages of nine and twelve (1.3 million in all), to have a laptop by 2012, each with an internet or intranet connection to download free educational software and electronic books. To this end a partnership has been initiated with the One Laptop per Child organization linked to the Massachusetts Institute of Technology. Similar initiatives are being explored in other countries using Intel's Classmate netbook or Portugal's Magellan netbook. This ecosystem approach is the result of aggregating local, regional, and global technology organizations in addition to NGOs and governments that provide hardware, software, and infrastructure expertise, complemented by the schools' governing boards, principals, teachers, administrators, and students.

Mobile applications are also being used to monitor teacher attendance, school books inventories, etc. The use of computers and Internet are only beginning to transform teaching and learning in Africa. Improved access will enable Africa's students to learn and compete with their peers around the world in a more level playing field.



ITES-BPO: The Next Frontier

Rapid growth in global outsourcing has made the IT Enabled Services (ITES) and Business Process Outsourcing (BPO) industries essential new growth frontiers in Africa. Large and small companies around the world are increasingly calling on African enterprises to meet their demand for efficient, reliable, and cost-effective customer support and other key services. Success in Africa's ITES-BPO sector brings with it a number of benefits, including:

- Employment of women who now account for a large percentage of the total professional and technical workers in the IT services and ITES—a much higher rate of female participation than in the service sector in general³.
- Increase in investment - The IT and ITES industry helps attract foreign investment, transform the financial sector, energize local exports, and nurture ICT skills and innovation in the workforce.
- Job creation – It is estimated that every 1 job created in the IT/ITES sector results in the creation of 4 additional jobs in ancillary sectors like transport, training, catering etc.

Countries like Mauritius and Ghana have identified IT enabled services (ITES) as one of the key sectors for enhancing economic growth and want to position themselves as premier BPO destinations in Africa.

In recent years, Mauritius has created about 7000 jobs in IT/ITES, and the sector is contributing about 4 percent of the country's GDP.

Ghana estimates that it will create some 37,000 jobs by 2011, and increase the sector's contribution to GDP by about US\$750 million⁴.

³ Source: The Global Opportunity in IT-Based Services: Increasing Country Competitiveness, World Bank

⁴ Source: GASSCOM – Ghana Association of Software and IT Services Companies

Who Are We

The Global Information and Communication Technologies Department (GICT) is a joint department of the World Bank and the International Finance Corporation (IFC). Bringing together IFC's experience in private sector investment transactions and the World Bank's expertise in policy and regulatory matters, GICT promotes access to information and communication technologies in developing countries.

What We Do

The World Bank Group is the largest major multi-lateral financier and provider of policy advice in the field of ICT in developing countries. Over the past 10 years, the World Bank Group has provided more than US\$3 billion of funding in over 80 countries through its financing arms; the International Bank of Reconstruction and Development (IBRD or World Bank), the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA).

The World Bank activities in Africa include:

- Support for on-going sector reforms in over 30 countries through advice and capacity building for governments and regulators Targeted investment in partnership with the private sector to improve regional connectivity (Regional Communications Infrastructure Program - including, Burundi, Kenya, Madagascar, Rwanda, Malawi, Mozambique, Tanzania; Central African Backbone Program - including: Cameroon, Central African Republic, Chad; ECOWAS Connectivity Program (under preparation);
- Targeted investment in partnership with the private sector to improve regional connectivity: Regional Communications Infrastructure Program - including, Burundi, Kenya, Madagascar, Rwanda, Malawi, Mozambique, Tanzania; Central African Backbone Program - including: Cameroon, Central African Republic, Chad; ECOWAS Connectivity Program (under preparation);
- Supporting e-government applications to foster transparency and efficiency of public institutions and improve delivery of social services to citizens (countries include Ghana; Rwanda; Kenya, Mozambique, Tanzania; Benin (under preparation); Morocco, and Tunisia;
- Promoting skills development in the IT/IT enabled services sector to allow countries to connect with leading international companies, cutting edge business practices and current technologies (Nigeria, Ghana).

IFC activities include:

- Financing over the last 10 years private sector operators in 41 African countries, providing US\$941 million in debt, guarantee and equity financing in IFC own account;
- Mobilizing for these projects another US\$588 million for the account of syndicated banks in form of B loans and guarantees;
- Expanding access to ICT by developing and replicating Advisory Services programs, such as the Village Phone program, which are now being rolled out in multiple countries with 12,000 Village Phone Operators (more than 70 percent women) in five countries (Uganda, Nigeria, Madagascar, Malawi, India) serving an estimate 3 million under-served populations.

Information for Development Program (*infoDev*)

InfoDev is a multi-agency partnership with a mandate to maximize the impact of ICT on development and poverty reduction. *InfoDev* has a particular focus on increasing access to information infrastructure, applications and services, and supporting private sector ICT innovators and entrepreneurs.

GICT and the Government of Korea (GoK) have also recently launched a partnership to advance the ICT for Development agenda, with the goal of contributing to growth, and poverty reduction in developing countries (Korean Trust Fund in ICT4D).



Many of the stories in this booklet are derived from a complementary series of short films on “Connecting Africa” and “*infoDev*’s Business Incubation Network.”

Visit www.worldbank.org/connectingafrica to learn more.

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