



Africa on the move – Investment in ICT is catalyzing economic growth

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For more than a decade, Information and Communication Technologies (ICT) has played a significant role in both economic growth and poverty reduction. ICT increases efficiency, provides access to new markets and services, creates new opportunities for income generation and gives economically handicapped people an opportunity for sustainable employment. A key part of a development strategy and economic growth, is to ensure effective deployment of ICT in the productive sectors. Africa is proactively gearing itself to derive maximum benefit from adoption of ICT. Over the last decade, there has been a significant increase in rollout of various aspects of ICT in Africa including the spread of mobile telephony and easy accessibility to broad-band by laying of undersea cables. However, deployment of ICT in Africa varies significantly between the regions as well as within countries in a region. This demands differentiated ICT strategies for different regions instead of adopting a “one-size-fits-all” approach.

The phenomenal increase in ICT access has been supplemented with a rapidly increasing debate on its contribution to economic growth, development, and poverty reduction. Effective poverty reduction initiatives require inclusive economic growth and implementation of policies, which affect the lives of people at the bottom of economic pyramid. It requires a planned and coordinated approach to invest in education, health, environment and physical infrastructure including ICT. As soon as ICT becomes affordable, even to underprivileged section of society, new employment opportunities that support social development and micro-entrepreneurship, emerge. Leveraging on ICT has helped many resource-poor countries to build competitive economies (S. Korea, Singapore, Mauritius etc.)

ICT contributes to economic growth by:

- (1) Enabling better governance, a prerequisite to growth, through increased participation, accountability and transparency;
- (2) Lowering costs of services and facilitating access to them, notably in administration, education, health and banking;
- (3) Increasing productivity across all sectors & facilitating market expansion beyond borders to harness economies of scale;
- (4) Providing access to research;
- (5) Development of relevant ICT based products and services;

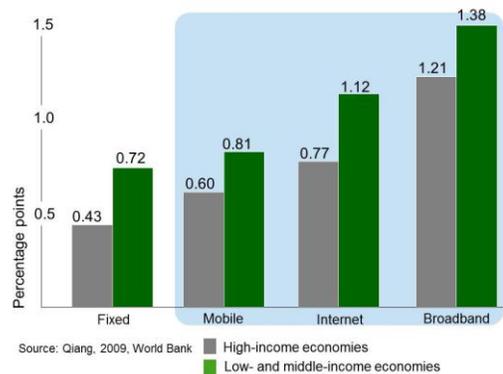
ICT is a means whereby developing countries can leapfrog over development stages and technology barriers to achieve both economic growth and broad-based development. ICT can also have broader developmental impact and provides powerful tools for empowerment and income generation, as well as for increasing access to education and other social services. Mobile telephones are assisting businesses in the informal economy by helping them attract additional business.

Manobi is a private multi-channel service provider in Senegal which

- (1) Improves the safety of fishermen by establishing a GPS-based navigation platform
- (2) Partners with rural communities to establish a land resources management system and reducing disputes over land
- (3) Delivers market information to farmers and fishermen, who can monitor real-time prices in several markets and sell their fruit and vegetables where they can get the best price

Manobi employs data collectors who record market prices in several locations. The data is transmitted by mobile phone to a central database where they are accessible via the web or via SMS on any phone. To access the information, farmers and fishermen pay US\$5 per month, plus a small fee for message services. Using these services, farmers have increased their annual income by over 30%

Even prior to the current era of widespread mobile telephony and Internet usage, a causal relationship between telecommunications infrastructure and economic output was identified using data from the 21 Organisation for Economic Co-operation and Development (OECD) countries. This relationship also exists for mobile telephony and data from 113 countries over a 20-year period, which showed that a 1 per cent increase in the telecommunications penetration rate leads to a 0.03 per



cent increase in gross domestic product (GDP)¹. For mobiles, these figures are even higher; a 1% growth in mobile networks has resulted in a 5% increase in GDP per capita² and every 10-percentage point increase in broadband Internet penetration in developing countries results in 1.38 percentage points of additional GDP growth³.

This positive correlation between ICT and economic growth extends to the developing world through direct expenditure on ICT infrastructure and services, as well as through its economic multipliers. Mobile network suppliers have invested more than 90 billion dollars in Africa, and in some countries, they are now the most profitable enterprises as well as significant generators of employment. Telecommunication revenue and expenditures presently contribute an average of 7 per cent of the GDP in many African economies, while investment in communications has reached about 5 per cent of the total investment spending on the continent.

One of the most direct economic impacts of mobile phones in Africa is through job creation. With an increase in the number of mobile phone operators and greater mobile phone coverage, labor demand within these sectors has increased. The mobile phone sector has also spawned a wide variety of business and the mobile phone sector has spawned a wide variety of business and entrepreneurship opportunities in the informal sector. Mobile phone companies have created extensive phone-credit distribution networks in partnership with the formal and informal sector. Young men and women are often seen selling airtime cards on the streets. Numerous small-scale enterprises have also opened shops to sell, repair, and charge mobile phone.

The combinations of fast, reliable and easy access to network, network security, availability of capability/skills, dynamic market structure and effective regulatory environment and governance, are critical for supporting a vibrant economy. It determines whether firms from developing countries can participate, effectively and efficiently, in the information economy and compete in global e-marketplaces.

Sustainable economic growth is the result of an interplay of a number of factors, among them stable governance performance, physical infrastructure, skilled human resources, access to technology, and an enabling policy environment. While ICT plays an enabling role in all of these areas, isolated investment in ICT does not permit leapfrogging to higher economic growth rates. Nevertheless, as a key part of development strategies, mainstreaming ICT in the productive sectors “is a matter of economic survival”. In the words of NEPAD⁴: “Better connectivity offers the prospect for African countries to transform their economies from reliance on traditional activities, with low productivity and weak growth outlook, to more advanced activities that can sustain higher wages, create new employment and reap the other social benefits offered by new technologies”.

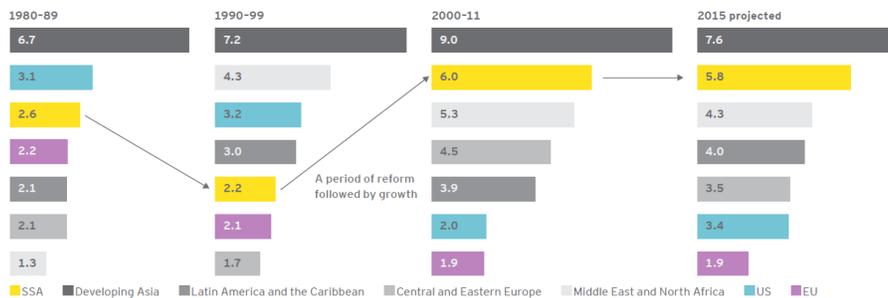
Africa is on a growth path and for the fourth consecutive year since 2007 Africa’s real gross domestic product (GDP) growth rate exceeded 5%. Twenty-five countries in Africa achieved a GDP growth rate of above 5% and another 14 countries grew at a rate between 3% and 5%.

¹ Torero, M. and von Braun, J. (2006). Information and Communication Technologies for Development and Poverty Reduction: The Potential of Telecommunications. Washington, Johns Hopkins University Press and IFPRI.

² Djiofack-Zebaze & Keck, 2009).

³ Qiang and Rossotto (2009)

⁴ NEPAD – The New Partnership for Africa's Development, an African Union strategic framework for pan-African socio-economic development, is both a vision and a policy framework for Africa in the twenty-first century.



Source: IMF World Economic Outlook Database, October 2012. The GDP growth rates have been calculated as an unweighted average for the respective time frames.

High prices for commodities, increased remittances and policy reforms, which have stimulated foreign direct investment (FDI), are the main drivers. However, the growth path is still fragile as diversification of African economies is generally low.

The transformation of African economies is on-going and will continue at a faster pace. Better-diversified economies with a growing service sector create new employment opportunities, strengthen productivity, and reduce the risks of economic downturns. Within the service sector, ICT services have an important role to play – as a sector of the economy as well as an enabler for other sectors. Further, given that informal and formal small and medium enterprises (SMEs) are the backbone of broad-based economic growth, it is crucial to mainstream the use of ICT for micro, small and medium enterprises. Even economies depending on the production of raw materials and on subsistence agriculture can achieve efficiency improvements through ICT investment.

ICT is also having a visible impact on the lives of individuals, changing the way people live and work in many different ways.

Mobile banking

Banking by cell phone in Africa is one of the most significant developments in the recent history of the continent's financial sector. The success of some of the early pioneers of phone banking is being replicated in other countries, through the launch of other types of financial service products delivered by cell phone. Safaricom's M-PESA in Kenya is one of the first mobile banking applications to be launched in the continent.

M-PESA was launched in 2007 to meet the banking needs of the financially excluded. By July 2012, M-PESA had more than 14 million customers (about 38 percent of Kenya's population) and almost 25,000 agents (up from 355 at inception). Person-to-person transactions stood at more than \$375 million a month. There is strong demand for M-PESA's services in Kenya, which have had a positive economic impact. Use of and satisfaction with M-PESA is high. About 40 percent of households use M-PESA (63 percent of them for regular financial support), 90 percent believe their money to be safe with M-PESA, 81 percent find it very easy to use, and 84 percent believed the service to be critical to their socioeconomic well-being. Incomes of rural recipients increased 5-30 percent since they started using M-PESA. M-PESA has succeeded mainly because it has a broad market positioning, has a built-in accountability structure, is easy and safe to use, provides 24/7 support, is affordable, is provided by the largest mobile phone network, and has a wide network of agents ensuring convenience in sending and receiving cash. (Morawczynski and Pickens (2011))

WIZZIT, in South Africa, is another mobile-based “virtual bank,” whose services can be accessed through any national mobile phone operator. In addition to providing a valuable service to customers, WIZZIT has had a positive economic effect, by employing nearly 2,000 previously unemployed “WIZZ kids” as its sales force. These companies are revolutionizing the financial services sector in Africa, bringing low-cost financial services to the majority of the population that was initially unable to access the traditional banking sector.

Telemedicine

Telemedicine holds great promise for Africa. It can provide rural health care in the most remote areas. Africa carries 24% of the world’s burden of disease, with only 3% of the world’s health workers serving the affected. Mobile phone operators, health service providers, health ministries, and donor organizations are working together to develop innovative ICT-based approaches to healthcare service delivery. This will reduce the long journeys that people need to undertake to get medical help, sometimes up to days. It will improve the lives of African Nationals. One such application is TRACnet, used by the Ministry of Health in Rwanda to improve the quality of service in primary health care institutions.

TRACnet is a mobile phone-based platform for monitoring HIV treatment in Rwanda. By 2009 it had registered more than 1,000 service providers, conducted more than 85,000 annual user sessions, and collected longitudinal data on more than 105,000 patients. Thanks to TRACnet, Rwanda has access to robust datasets of HIV/AIDS patients located centrally and accessible from any location, allowing faster and better informed intervention. As a result, public monitoring of HIV/AIDS transmission patterns has improved. Doctors and patients also have instantaneous access to more reliable information. Real-time monitoring of antiretroviral drug stocks leads to quicker replenishments. The improved information exchange between remote health facilities and central actors has reinforced accountability in care and treatment of patients. TRACnet has succeeded because it is based on simple technology using the widely available platform of the mobile phone. The centralized database is interoperable with multiple communication channels and it uses open source software giving it flexibility and scalability. It has the full support of the Rwanda government—a key to its success—and the program includes a training component that ensures that health workers are well prepared to work with the system.

Agriculture

Agriculture is an essential part of Africa’s economy, accounting for 13 percent of GDP and employing about 194 million people (World Bank 2010). ICT is having a positive impact on the sector in many ways. E-Agriculture is an emerging field focusing on the enhancement of agricultural and rural development through improved information and communication processes. More specifically, e-Agriculture involves the conceptualization, design, development, evaluation and application of innovative ways to use information and communication technologies (IT) in the rural domain, with a primary focus on agriculture. E-Agriculture is a relatively new term and we fully expect its scope to change and evolve as our understanding of the area grows. The biggest beneficiary for use of ICT in agricultural has been the farmer as they have been provided with a solution to increasing access to Market & Market Information.

Esoko leverages mobile phones to enhance productivity gains for African farmers and traders by giving them quicker access to better market information. Starting in 2007 in Ghana, has now scaled to seven other countries (Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Madagascar, Mali, and Togo) and had grown to 40 full-time employees and about 9,000 users. Esoko has led to a 6.4 percent fall in grain price market and a 3.5 percent decline in mean prices. Transactions costs for farmers and traders have also fallen by \$2–\$150 per transaction by significantly reducing the role of intermediaries or cutting them out altogether. It has also transformed mobile phones into a market bulletin increasing their utility beyond voice and text. Esoko has succeeded mainly because it uses open source software, enabling it to scale up, tailor business services to local needs, use affordable mobile telephony, offer free listing of services, allow sending of and receipt of text messages in several languages, provide real-time commodity prices, and provide direct access to markets worldwide.

IT-enabled services and Business Process Outsourcing

In addition to being a platform for delivering services, the ICT sector has the potential to be a source of economic growth and employment itself. The IT-enabled service (ITES) sector—also known as business process outsourcing (ITES-BPO)—is becoming established around the world, including in some African countries. The sector covers a wide range of industries from applications development and services through to IT-enabled services such as call centers and other types of business process outsourcing. The ITES-BPO industry is growing and still has considerable potential as a source of growth in Africa. Large and small companies around the world are increasingly hiring companies in Africa to help them deliver efficient, reliable, and cost effective customer support and other key services, such as data entry and document processing. Success in the ITES-BPO sector brings with it a number of benefits, including the following:

- Employment for women
- Increase in investment
- Job creation with development of ancillary sectors such as transport, training, and catering

In Ghana the government’s proactive policies of sector reforms has created a competitive telecommunications industry with a telephone penetration of more than 60 percent. This industry is providing a platform on which an IT and IT-based services industry is growing. More than 1,000 jobs were created in the industry in 2010. Ghana estimates that it will create some 25,000 jobs by 2018, increasing the sector’s contribution to GDP. The partnership between the public and private sector to train business process outsourcing agents will increase the number of training service providers in the country further adding high values jobs to the economy.

ICT infrastructure in Africa has increased over the past years, in spite of the challenges of low population density, low incomes and large rural populations. Particularly noteworthy is the virtual explosion of mobile phones in many African countries, which surpassed 600 million subscribers in 2011 and continues to grow at a higher rate than any other region. Further, although Africa lags in terms of other forms of ICT usage with an estimated 250 million Internet users, between 2000 and 2011 the growth of Internet usage exceeded 2,000 per cent, which is more than five times than the rest of the world. Africa is experiencing a unique phenomenon of rapid increase and usage of Internet on the mobile phones.



African economies taking steps to compete globally

A number of initiatives are now taking place which will help accelerate the broadening of ICT uptake and smooth out the variations in access to ICT infrastructure within and between countries. The most notable are the various international fiber projects that will vastly improve the availability of international and cross-continental bandwidth. In view of imminent increases in international bandwidth access, national infrastructure has become a much higher priority, and many countries are making strong efforts to establish national backbones. African operators have awarded contracts totaling over US\$1 billion for at least 30,000 kilometers of national fiber transmission networks. Alongside the rollout of national fiber backbones has been the simultaneous emergence of microwave transmission networks. Mobile operators are now also upgrading their transmission networks in order to provide the capacity to support the delivery of 3G services. To take maximum advantage of these developments, national interconnection between networks still needs improvement, along with increased deployment and lower cost access in the last mile.

Apart from liberalization of the telecommunication sector, the wider policy framework is equally influential for the development of ICT. An inclusive ICT policy addresses a country's vision of its society, includes a situation analysis, defines objectives and targets and describes policy initiatives designed to reach these targets. National policy is a key factor in the effective development and use of ICT, and an increasing number of African governments have begun to adapt their national regulatory frameworks to help foster the use of ICT. The primary objective of regulatory processes is to ensure transparency and openness while establishing a level playing field. Furthermore, ICT policies need to be coherent with other government policies.

Supporting resources and capacities are also essential in order to benefit from ICT. Apart from reliable electricity supply – which is needed to run any ICT infrastructure – transport networks such as roads or rail are required to support increased economic and social activities.

For the majority of the population, public access facilities will continue to be an important part of the ICT landscape. Community based access can be in the form of private cybercafés or state-supported telecentres. These public facilities can provide multiple low-cost services, ranging from phone calls and e-mail to multimedia distance learning and e-commerce. These community access points provide an important “bridge” facilitating ICT access by SMEs and households in Africa.

The Kenyan government has launched the Digital Village Project to establish ICT centres throughout the country. To jump-start the process, the programme is expected to train 1000 digital village managers to oversee centres in 210 national constituencies. Managers will undergo an intensive three-week training programme in the basics of business management. The ICT centres will operate on a public-private partnership basis with the Ministry of Information and Communications and will involve collaboration across government, public and private sector organisations, development partners, civil society and individuals. These Digital Kiosks are being seen as an important way of realizing universal service objectives in rural and remote locations.

Human capacity is often another bottleneck to the spread and use of ICT across Africa. Illiteracy not only hinders economic and social development – it is also a major obstacle to the spread and use of ICT. Investment in education at all levels – basic, secondary and vocational – is essential for Africa's further

development, not only to ensure that the public can effectively use ICT but also to create a better enabling environment for local innovation and wealth creation.

ICT policy frameworks are developed in collaboration with key national stakeholders from all relevant government departments, as well as civil society and the private sector. Thirty-five African countries now have an ICT policy in place; eleven are in the process of elaborating one and only in seven countries is the process not yet launched.

Mauritius' development vision identified early-on the importance of building an information economy (including ICT development) in ensuring that it could develop into a modern nation and to enhance its competitiveness in the global market place. Reform in the telecommunication sector began in 1997 with analytical work and extensive consultations. Recent top-level commitment and specific funding for ICT projects such e-government and e-education has generated a new impulse to strengthening Mauritius' emerging knowledge economy. A key step towards the realization of its goal has been Mauritius' decision to connect to the Southern Africa Far East fiber optic submarine cable, as this significantly enhanced its connectivity. Today, 90% of the population has access to the Internet, and 89% of Mauritian households have fixed line telephone access. Other factors that determined the country's supportive ICT environment include: stable politics, follow-through in ensuring regulations were implemented and liberalization of the ICT sector. In the international context, its bilingual environment is another asset. Overall, Mauritius has achieved tremendous progress in ICT development thanks to a common vision and a supportive public policy framework.

Conclusion

ICT is pivotal to the socio-economic development of Africa by increasing job and wealth creation. ICT offer an opportunity for development, but not a cure. For the potential benefits of ICT to be realized, many fundamentals need to be put in place: prompt deregulation, effective competition among service providers, free movement and adoption of technologies, targeted and competitive subsidies to reduce the access gap, and institutional arrangements to increase the use of ICT. To achieve this, Governments will need to invest heavily in the sector with particular emphasis on the following areas: BPO, E-Government; IT parks, software and hardware development.

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