

**PART V**

# **Engaging the Private Sector to Upgrade Infrastructure**



## ICT in Sub-Saharan Africa: Success Stories

*Kaoru Kimura, Duncan Wambogo Omole, and Mark Williams*

**A**s recently as 1998 few people in Sub-Saharan Africa had access to a telephone, and even fewer had access to computers. Since then, this situation has changed out of all recognition. Africa has experienced a continent-wide revolution in the growth of the information and communication technology (ICT) sector. Networks have expanded, services have been made available on a mass market basis, and prices have fallen. ICT is now an everyday service for many Africans, affordable to the majority rather than the privileged few. This growth continues today as companies innovate, bringing new products and services to the market.

This chapter examines the ICT sector in Africa. The first section describes the expansion of voice networks and broadband Internet. The second section identifies the key factors that have contributed to the expansion of the sector. The third section analyzes the impact of ICT on a variety of areas, including mobile banking, telemedicine, and agriculture. The last section examines the role of the World Bank Group, to date and in the future.

### EXPANSION OF THE SECTOR

The telecommunications sector in Africa has expanded rapidly since 1998, with both an increase in network and services provided. At the same time, prices have fallen everywhere, bringing telecommunications within the economic reach of the majority of Africans.

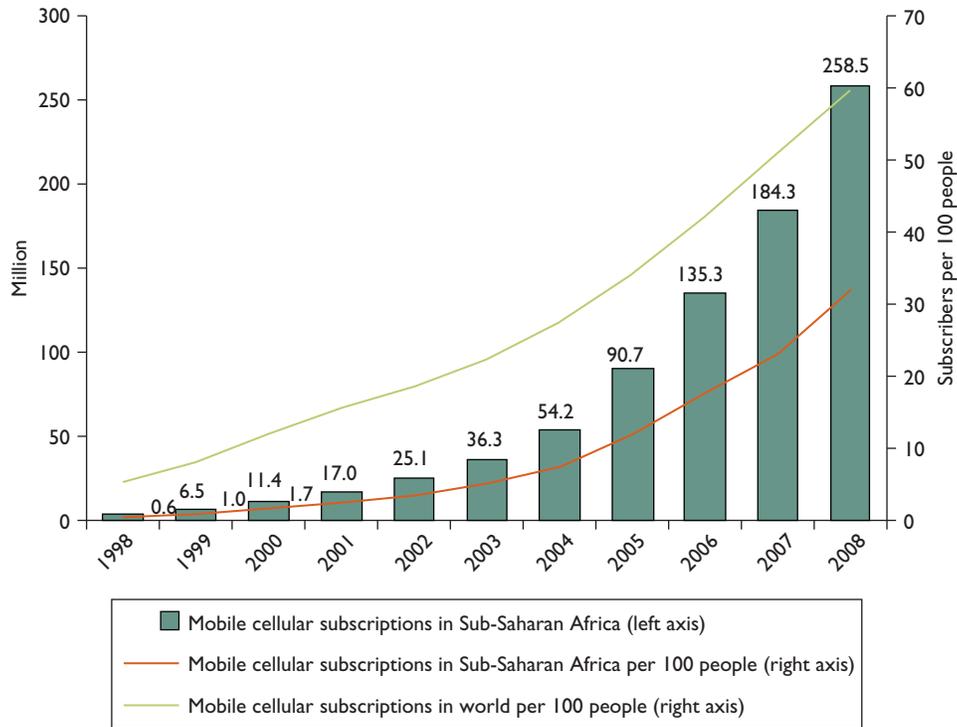
### Voice networks

Voice networks are expanding rapidly, and the number of people using the networks is growing. Between 1998 and 2008 the number of mobile cellular subscribers in Sub-Saharan Africa leaped from about 4 million to 259 million (figure 19.1)

Innovations in the way services are delivered have also made ICT more accessible to customers in Africa. Prepayment has allowed customers to control their expenditures and avoid regular monthly subscription payments. African operators have also led the way in selling prepay credits in very small units, making calling accessible to large numbers of people, including the poor.

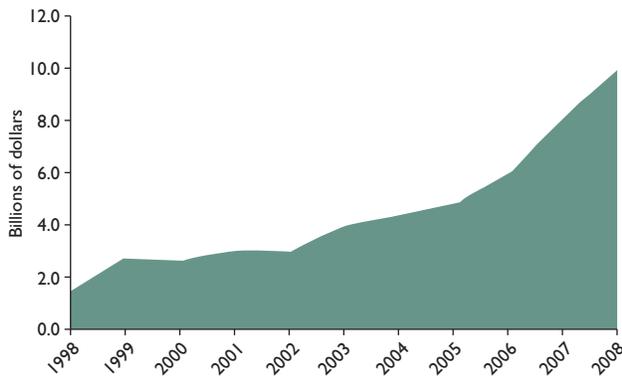
A combination of new technologies and sound policy choices, including market liberalization, by governments has triggered private investment, which has laid the foundations of the connectivity revolution in Africa. The global standardization of mobile telephone network technology has created international competition in both network equipment and customer devices, pushing down costs and lowering prices. The liberalization of markets and the establishment of sound regulatory frameworks have allowed private investors into the market, driving the expansion of telecommunications networks. Between 1998 and 2008, total private sector investment in telecoms in Sub-Saharan Africa reached \$49 billion (World Bank 2010a), mainly in the mobile market (figure 19.2). This investment has resulted in a rapid increase in the proportion of the population covered

Figure 19.1 Mobile Cellular Subscription in Sub-Saharan Africa, 1998–2008



Source: World Bank 2010b.

Figure 19.2 Telecommunications Investment in Sub-Saharan Africa, 1998–2008



Source: World Bank 2010a.

by mobile networks, which increased from about 10 percent in 1999 to 60 percent in 2009. More than 90 percent of Sub-Saharan Africa’s urban population now lives within range of a mobile signal, a remarkable transformation in only 10 years (figure 19.3).

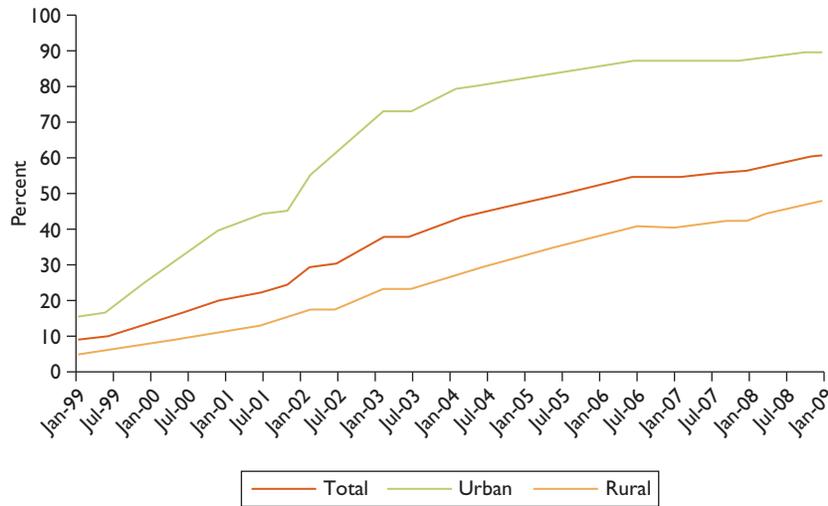
The success of mobile communication has been very scalable, with large and small countries experiencing rapid increases in network coverage and access. Both Nigeria, a country of about 150 million people, and Rwanda, a country of about 10 million people, have experienced steady growth in network coverage (figure 19.4).

At the same time as communications networks have been expanding across Africa and the number of subscribers has risen, the price of telecommunications services has been coming down. The cost of mobile communications fell by nearly 50 percent between 2000 and 2009. By 2010 the average price of a mobile call in Africa was about \$0.10 a minute (AICD forthcoming), and prices are continuing to fall as competition intensifies.

### Broadband internet

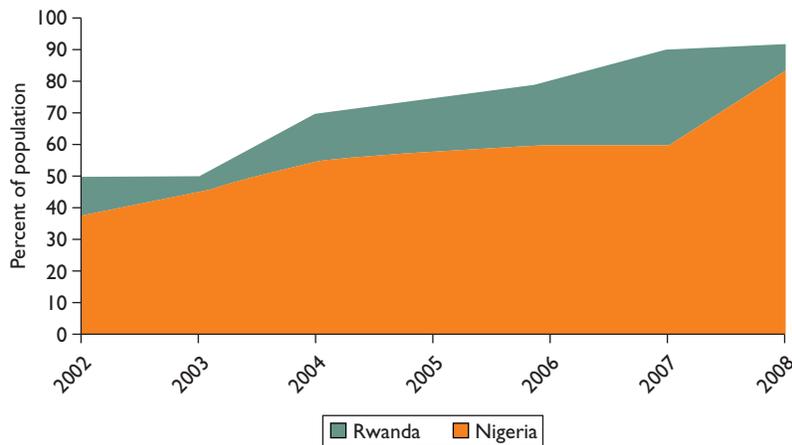
Globally, broadband Internet is becoming an important part of national economies. Africa lags far behind most other parts of the world in access to broadband Internet. Broadband penetration in the region was 6.5 percent in 2008, one-quarter of the world average (ITU 2010). In 2008

Figure 19.3 Mobile Coverage in Rural and Urban Sub-Saharan Africa, 1999–2009



Source: Authors based on data from GSM Association.  
 Note: Figures show connection to GSM network.

Figure 19.4 Mobile Network Coverage in Nigeria and Rwanda, 2002–08



Source: ITU 2010.

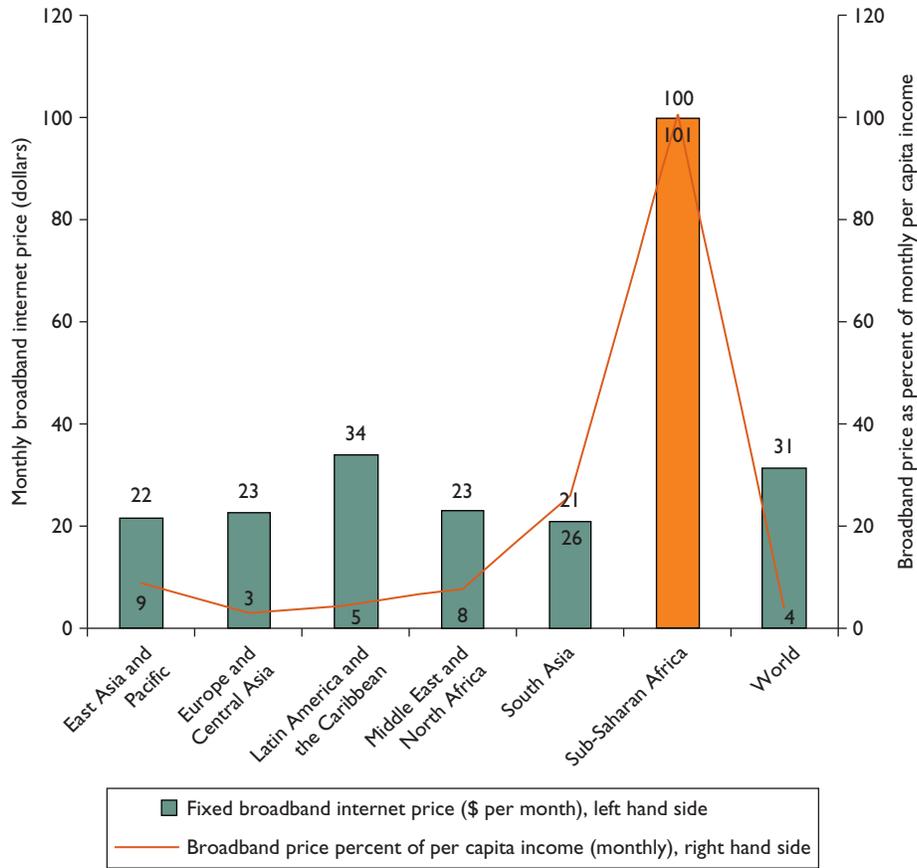
fixed broadband Internet cost \$100 a month in Sub-Saharan Africa, more than three times the world average of \$31.40 (ITU 2010) (figure 19.5).

This situation is starting to change, as broadband Internet becomes more widely available and prices begin to fall. Nigeria, Kenya, and South Africa are leading the way in Africa, with rapidly rising numbers of broadband subscribers, mainly through wireless handsets. In most African countries, however, broadband remains beyond the reach of the majority of the population.

### KEY SUCCESS FACTORS

Many factors have contributed to the success of the ICT sector in Africa. The most important of these has been the continentwide change in sector policy from one based on monopoly provision of ICT services to a privately owned, competitive market. The vast majority of countries in Africa have liberalized their telecommunications markets, and that liberalization has spurred private investment into infrastructure and created competition between operators, leading to expanded availability of services and reduced prices.

Figure 19.5 Monthly Price of Broadband Internet, by World Region, 2008



Source: ITU 2010.

Many governments have also privatized the incumbent telecommunications operator. Privatization is significant because it removes one of the main distortionary factors in the market and allows the government to carry out its main role of regulating the market without any conflict of interest.

These policies have resulted in the rapid growth of the mobile telecommunications segment of the market. Broadband Internet has been much slower to take off in part because of the inadequacy of certain segments of the broadband network infrastructure, particularly access to the international communications networks. These bottlenecks have been constraining growth of broadband Internet, limiting its availability, and making it prohibitively expensive. Recently, the growth of the submarine fiber-optic cable infrastructure has dramatically increased the availability of international bandwidth on the continent, and competition between cable providers has led to rapid declines in prices.

The success of the ICT sector in Africa is also attributable to innovation within the industry itself. Technologies and business models have been adapted to the African market, improving efficiency and tailoring services to the specific needs of customers in the region. Finally, the political economy of the telecommunications sector has affected government’s willingness to undertake sector policy reforms.

### Creating competitive markets

Competition in the telecommunications market was introduced in Africa in the late 1990s, when mobile networks were first established there. All but a handful of countries in Sub-Saharan Africa have introduced competition in their mobile markets, and more than half have more than two mobile operators (ACID forthcoming). This increase in competition has been one of the primary drivers of the sector growth and network expansion.

Competition takes time to develop. Countries that reformed early have experienced better sector performance than late reformers. Performance also improves as competition intensifies. Mobile subscription penetration rates in Africa grew by less than 1 percentage point a year between the establishment of the first mobile network and the entry of the second operator. By the time a fourth operator enters the market, the subscriber penetration rate grows by 2–4 percentage points a year (AICD forthcoming).

The way in which liberalization takes place also has an impact. In Nigeria, for example, the government awarded the first three GSM (Global System for Mobile communications) licenses simultaneously, spurring a race to expand coverage and gain market share. Nigeria now has five mobile operators and is considered one of the most competitive markets in the region. With a mobile subscriber penetration rate approaching 50 percent, it is also one of the best connected countries in Africa.

Competition has been the primary driving force behind mobile network expansion and, more recently, declines in the price of calls. A recent study indicates that competition could potentially continue to drive this expansion until networks cover 90 percent of Africa's population (AICD 2010).

### Privatizing state-owned enterprises

State ownership of telecommunications operators distorts markets and adversely affects competition. Governments often give state-owned operators preferential treatment by carving out areas of exclusivity for them in the market or failing to enforce regulatory rules such as interconnection payments. At the same time, these operators often find it difficult to obtain the necessary capital and skills to

compete effectively with the private sector. The best long-term solution to these problems is to sell state-owned enterprises to create a level playing field for all players in the market.

Realizing this, governments across the region have privatized their state-owned telecommunications operators. By 2010, 28 African countries had gone through this process (see annex table 19A.1). Mali completed the privatization of its state-owned telecommunications operator in 2009 (box 19.1).

### Overcoming infrastructure bottlenecks

Most mobile operators have built their own end-to-end networks, overcoming infrastructure bottlenecks along the way. As the focus of the ICT industry in Africa shifts toward broadband Internet, network infrastructure requirements are changing. Broadband requires networks capable of handling much higher volumes of traffic than that generated by voice services. As much of the traffic generated by broadband crosses international borders, it also requires more international network infrastructure. This type of network infrastructure has traditionally been underdeveloped in Africa. The lack of suitable infrastructure has become a significant bottleneck, contributing to the slow growth of the Internet in the region.

This situation began to change in 2009 with the development of undersea fiber-optic cables connecting Africa to the global communications networks. By 2010 Sub-Saharan Africa had 12 operational cables, and another 5 were under construction. The operational cables have a combined capacity of more than 12 terabytes per second (tbps). A total of \$1.7 billion is being invested in the 5 undersea cables

#### Box 19.1 Privatization and Sector Reform in Mali

Mali's state-owned telecommunications operator, Société des Télécommunications du Mali (SOTELMA), was established in 1989 as the state-owned monopoly operator. Despite the continuous growth in the mobile market in Mali—led by the introduction of competition, in the form of a second GSM operator, Ikatel in 2003—the fixed-line market remained underserved and dominated by SOTELMA.

In 2009 SOTELMA was successfully privatized, with a 51 percent stake going to Maroc Telecom. At the same time, a new legal framework and universal access strategy were adopted. The telecommunications penetration

rate rose to 40 percent, and Maroc Telecom is now focusing on revitalizing the fixed-line network and rolling out fixed broadband Internet.

This process was supported throughout by the World Bank, through a technical assistance project covering the privatization, the reform of the legal and regulatory framework, and capacity building for the government institutions. A World Bank team continues to work with the government of Mali to further liberalize the telecommunication market and improve connectivity by developing regional links to neighboring countries.

currently under construction, which will bring an additional 9 tbps of capacity to the region (figure 19.6).

The impact of this growth is already being felt. In East and Southern Africa, the SEACOM, TEAMS, and EASSY undersea cable projects were all operational by 2010. Wholesale prices for international bandwidth fell, allowing operators to provide better-quality service, usually in the form of faster download speeds or larger download caps. The arrival in 2010 of new undersea cables along the west coast of Africa (Glo-1 and MainOne) together with the expected arrival of two more cables (ACE and WACS) in 2011 and 2012 is likely to have a similar effect on markets on the other side of the continent. The international broadband infrastructure bottleneck is therefore well on its way to being overcome.

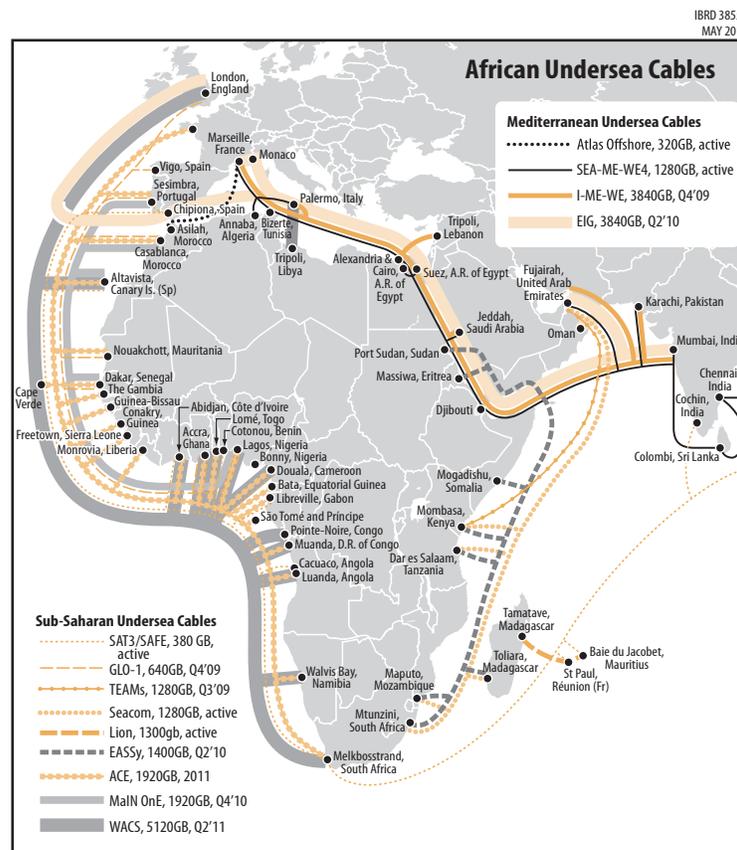
Domestic fiber-optic networks are needed to carry communications traffic both within and between countries, particularly countries that are landlocked. They are therefore as important as undersea fiber-optic networks for the

development of the Internet in Africa. Development of these networks has been much slower, although the recent upsurge of interest by African telecommunications companies in broadband has prompted new investment in domestic fiber-optic networks. For the foreseeable future, this interest is likely to focus on servicing the profitable intercity routes rather than connecting smaller towns and rural areas. A broadband infrastructure bottleneck is therefore likely to remain in these areas for some time to come (Williams 2010).

### Fostering innovation

The expansion of communications services creates new business opportunities and innovative ways of delivering services. The African telecommunications industry itself has also been a source of business innovation. African operators have had to work hard to find ways of rolling out networks in difficult physical environments and creating

Figure 19.6 Undersea Fiber-Optic Cables in Africa, 2010



Source: <http://manypossibilities.net>.

commercially viable business models based on a customer base that was once considered marginal. The introduction of prepaid airtime in very small units is one example of how African operators have introduced innovations in their commercial practices to suit the African market. Zain's one-network, free regional roaming service is another innovative business model that originated in Africa (box 19.2).

### Political economy of the sector

The rapid pace of policy reform in the telecommunications sector in Africa has been influenced by the political economy of the sector. Three key factors underlie this influence.

First, telecommunications has traditionally not been available to anyone other than a small elite section of the population able to afford and obtain a fixed line. But mobile phones are very popular and there is strong public demand for them, even in low-income countries. The proven ability of private companies to develop and operate mobile phone networks has therefore been less politically controversial than in other sectors.

Second, the telecommunications business, particularly mobile telephony, has been very profitable for many investors. As a result private sector interest in the sector has grown, and companies have been prepared to pay considerable sums for mobile licenses. This has provided an immediate source of revenue for governments that, combined with ongoing license-fees and tax payments, has made the telecommunications sector an important source of government revenues, which, in turn, has had an influence on government's willingness to liberalize the market and encourage private investment.

Third, the establishment of global technology standards in the telecommunications industry and the increasing level of international competition in the manufacture of telecommunications equipment have put strong downward pressure on the cost of building and operating telecommunications networks in Africa. These reduced costs have allowed many operators to maintain their profitability, even in the face of increasing competitive pressures.

### IMPACT OF ICT IN AFRICA

Several studies examine the macroeconomic impact of ICT. Roller and Waverman (2001) analyze 21 advanced countries over 20 years (1970–90). They find a causal nonlinear relationship between telecommunications infrastructure investment and economic performance, where impact increases once countries pass a certain threshold of telecommunications access. Qiang and Pitt (2004) find that ICT has made a significant contribution to economic growth across a wide range of countries.

More recently, research has focused on the economic impact of broadband Internet. Qiang and Rossotto (2009) find that every 10 percentage point increase in broadband Internet penetration in developing countries results in 1.38 percentage points of additional GDP growth. Koutroumpis (2009) finds a significant and positive relationship between broadband infrastructure and local, regional, and national economic growth, including growth in small and medium-size enterprises. These findings are consistent with other research that finds that broadband is an important factor in social transformation and improved service provision, particularly in rural areas, and that mobile broadband services are particularly well suited for improving the economic

#### Box 19.2 Borderless Roaming

In late 2006 Kuwait-based mobile operator Zain (formerly Celtel) launched the world's first borderless mobile network, One Network, in the Middle East and East Africa. The service began in 4 countries in East Africa (Kenya, Sudan, Tanzania, and Uganda) and expanded to 12 other countries (Burkina Faso, Chad, the Republic of Congo, the Democratic Republic of Congo, Gabon, Ghana, Madagascar, Malawi, Niger, Nigeria, Sierra Leone, and Zambia).

Source: Zain web site (<http://www.zain.com/muse/obj/lang.default/portal.view/content/Zainpercent20World/Zainpercent20Connect/Onepercent20Network>) and Business Monitor International (BMI) database (<http://www.businessmonitor.com/>).

Through this service, Zain's customers (both prepaid and postpaid) can make calls at local rates, roaming without incurring surcharges. They add air time with locally purchased airtime cards. In 2009 Zain added Internet access, e-mail, Multimedia Messaging Service (MMS), BlackBerry services, Short Messaging Service (SMS), international roaming, and mobile portal applications to its One Network local rate, further adding value to its African customers.

well-being of poor people (Lobo, Novobilski, and Ghosh 2008). Countries that do not develop effective broadband infrastructure may therefore be failing to capitalize on some of their economic growth potential (Gaasbeck and Kristin 2008; Tolkoff 2007).

The economic research on the impact of ICT has focused mainly on the impact at the level of the macro-economy or firms. 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 cell phone banking has been replicated in other countries, through the launch of other types of financial service products delivered by cell phone.

Safaricom's M-PESA in Kenya was one of the first mobile banking applications to be launched on the continent (box 19.3 and chapter 20). MAP mobile banking in Uganda followed suit. 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 "WIZZkids" 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

Mobile phone operators, health service providers, health ministries, and donor organizations are working together to develop innovative ICT-based approaches to healthcare service delivery. One such application is TRACnet, which is used by the Ministry of Health in Rwanda to improve the quality of service in primary health care institutions (box 19.4).

### Agriculture

Agriculture is an essential part of Africa's economy, accounting for 13 percent of GDP and employing about 194 million people (World Bank 2010b). ICT is having a positive impact on the sector in many ways (box 19.5).

### 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

#### Box 19.3 Serving the Banking Needs of the Poor in Kenya

M-PESA was launched in 2007 to meet the banking needs of the financially excluded. By July 2010, M-PESA had more than 11 million customers (about 30 percent of Kenya's population) and almost 20,000 agents (up from 355 at inception). Person-to-person transactions stood at more than \$375 million a month (Safaricom Ltd, 2010).

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 (Agrawal 2010).

Morawczynski and Pickens (2009) find that 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.

### Box 19.4 Improving the Quality of Service Provided by Primary Health Care Facilities in Rwanda

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 anti-retroviral drug stocks leads to quicker replenishments.

Source: [http://www.un.org/esa/sustdev/publications/africa\\_casestudies/tracnet.pdf](http://www.un.org/esa/sustdev/publications/africa_casestudies/tracnet.pdf); [http://www.kiwanja.net/database/project/project\\_voxiva\\_hivaidrelief.pdf](http://www.kiwanja.net/database/project/project_voxiva_hivaidrelief.pdf).

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.

### Box 19.5 Increasing Access to Market Information in West Africa

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 with only \$90,000 and operating in the red by up to \$21,000, Esoko had broken even by the fourth year and by the fifth year had \$1.4 million in revenues and about \$540,000 in profits. By 2010 Esoko had been 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 dispersion and a 3.5 percent decline in mean prices.

Source: <http://www.esoko.com/>; <http://www.slideshare.net/slavb/s-bartlett-esoko-cirad-2010>; <http://www.ifc.org/ifcext/spiwebsite1.nsf/f451ebbe34a9a8ca85256a550073ff10/0e6f5be010f90329852576ba000e2dad?OpenDocument>; <http://www.slideshare.net/slavb/davies-esoko-cirad-2010>.

Transactions costs for farmers and traders have also fallen by \$2–\$150 per transaction by significantly reducing the role of middlemen 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.

data entry and document processing. A 2010 study by McKinsey and Company estimates that the addressable market for IT and ITES offshoring is \$500 billion a year, of which only about 20 percent has been realized (Sudan et al. 2010).

Success in the ITES–BPO sector brings with it a number of benefits, including the following:

- *Employment of women.* Women now account for a large percentage of all professional and technical workers in the IT/ITES sector—a much higher rate of female

participation than in the service sector in general (Sudan et al. 2010).

- *Increase in investment.* The IT/ITES sector 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 job created in the IT/ITES sector results in the creation of four additional jobs in ancillary sectors, such as transport, training, and catering.

Ghana and South Africa have identified ITES as one of the key sectors for enhancing economic growth. Both seek to position themselves as premier BPO destinations in Africa (box 19.6).

### THE ROLE OF THE WORLD BANK GROUP

The World Bank Group has been involved in the ICT sector in Africa since 1969, when the International Development Association funded an \$800,000 telecommunication project in Burkina Faso. Its work has covered investment lending, policy and regulatory reforms, privatization, and e-government and applications projects. The Bank has provided technical assistance to 27 Sub-Saharan African governments to strengthen policy and regulatory frameworks and build institutional capacity in the sector, including capacity for regulatory design and implementation.

In 2007 the World Bank Group launched an initiative to enhance broadband connectivity in Eastern and Southern Africa through the Regional Communications Infrastructure Program (RCIP). The program is currently operational in seven countries (Burundi, Kenya, Madagascar, Malawi, Mozambique, Rwanda, and Tanzania) and may be expanded to other countries in the region. Similar projects are under

development in Central Africa (Cameroon, the Central African Republic, and Chad) and West Africa.

The Bank is also supporting governments in their efforts to use the ICT infrastructure to improve service delivery. In three stand-alone projects (e-Benin, e-Ghana, and e-Rwanda), it is providing funds to incorporate ICT into the delivery of public services. Implementation of the RCIP program in Kenya, Mozambique, and Tanzania also has major e-government components. ICT is also integrated throughout the broader World Bank portfolio of projects and is a major component of the Bank's research, dissemination, and policy development work in Africa. This work has included major outreach events, such as an innovations conference day held as a part of the Africa Union Summit in Ethiopia in 2010 and a seminar on "The Transformational Power of ICT for Africa" at the 2010 World Bank Group Spring Meetings.

The World Bank is also supporting African governments in their efforts to use the growing ICT infrastructure to develop the IT and ITES-BOP industry. Many of the ICT sector projects in Africa include components that support the industry through training, regulatory reforms, and, in some cases, investment in supporting infrastructure. A related initiative is the New Economy Skills for Africa Program (NESAP), a joint effort by World Bank

#### Box 19.6 Expanding Business Process Outsourcing in Ghana and South Africa

In Ghana the government's proactive policies of sector reform 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.

One of the efforts, an \$84.4 million World Bank project, is supporting the development of a business process outsourcing center. More than 1,000 jobs were created in the industry in 2009 and 2010. Ghana estimates that it will create some 37,000 jobs by 2011, increasing the sector's contribution to GDP by about \$750 million. The 2009 AT Kearney Global Services Location Index ranks Ghana 1st out of 50 countries in the world in terms of financial attractiveness and 15th in terms of location attractiveness. The partnership between the public and private sector to train some 50 training providers and 6,000 business process

outsourcing agents is expected to further strengthen Ghana's position as one of the most attractive locations for ITES business in Africa.

In July 2010 Amazon.com, the world's largest Internet retailer, announced that it would open a new customer service call center in Cape Town, South Africa, where it will operate a software development center. According to the local media, this business development was brought about by the strong commitment by the central and Western Cape governments for the development of the ITES-BPO industry. It is estimated that the call center will create 1,000 new jobs (600 permanent positions and 400 seasonal positions). Servicing will be provided in English and German. Local government officials hope that the deal will boost the local economy not only by creating jobs but also by demonstrating that Cape Town has the capacity to host world-class clients.

Source: <http://www.busrep.co.za/index.php?fSectionId=561andfArticleId=5554024> <http://retail.bizcommunity.com/Article/196/458/49992.html>.

Notes: (<http://www.ites.gov.gh/IT-Industry.aspx>).

**Box 19.7 Supporting Skills Development in Africa through the New Economy Skills for Africa Program—Information and Communication Technologies (NESAP–ICT) Initiative**

NESAP–ICT is the World Bank’s cross-sectoral initiative to support the development of ICT skills. Launched in 2008 in eight Sub-Saharan African countries (Ghana, Kenya, Madagascar, Mozambique, Nigeria, Rwanda, Senegal, and Tanzania), the program seeks to bridge education and industry gaps in the field, create a globally benchmarked assessment talent pool for the ITES-BPO industry, and strengthen collaboration with IT industry leaders and associations.

The initiative consists of two focus areas. Window I focuses on developing ICT skills for a new emerging ICT-based sector. Window II focuses on ICT use in education.

Implementation of Window I began in 2008. The various skills required for the IT/ITES sector were identified and segmented to meet each country’s needs. Fifty-four delegates from eight countries participated in a study tour of India. Pilot projects, guided by international best practice, were launched in four countries (Ghana, Kenya, Nigeria, and Tanzania). The program established partnerships with the world’s leading ICT companies (including Microsoft, Intel, Cisco, Oracle, IBM, Nokia, and EMC); with learning institutions (for example, Carnegie Mellon University); and with IT-BPO industry associations (for example, NASSCOM in India). Implementation of Window II, expected to begin in 2011, will build on the Window I accomplishments.

education, private sector development, and ICT sector units to provide skills development for the ICT industry (box 19.7).

In parallel with World Bank activities, IFC has been closely involved in the sector since the beginning of the mobile revolution in Africa. It committed a \$261 million

investment to 10 ICT projects in Africa during fiscal 2010. It is also investing in innovative new ICT businesses, such as WIZZIT in South Africa, which is providing mobile-based banking services, and Helios Towers Africa Ltd., which is providing tower infrastructure services to mobile operators in Nigeria.

**Table 19A.1 Privatizations of Telecom Incumbents in Sub-Saharan Africa, 1995–2010**

Country	Operator	Initial privatization transaction			Percent private 2008	Note
		Date	sold	(\$millions)		
Burkina Faso	ONATEL	December 2006	51	295	51	Private sale to Maroc Telecom.
Cape Verde	Cabo Verde Telecom	December 1995	40	20	59	Private sale to Portugal Telecom. Subsequent distribution to employees (5 percent of total), national private investors (14 percent), and government social security system (38 percent).
Central African Rep.	Socatel	—	—	—	—	France Cable and Radio owned 40 percent of shares at one point. Current status not available.
Côte d'Ivoire	Côte d'Ivoire Telecom	January 1997	51	210	51	Private sale to France Telecom.
Equatorial Guinea	Getesa	1987	40	—	40	Private sale to France Telecom.
Gabon	Gabon Telecom	February 2007	51	79	51	Private sale to Maroc Telecom.
Gambia, The	GAMTEL	January 2007	50	35	50	Private sale to Spectrum Investment Holding (Lebanon).
Ghana	Ghana Telecom	December 1996	30	38	70	Original private sale to G-Com consortium headed by Telekom Malaysia. In 2002 the government of Ghana abrogated the management contract with G-Com and bought back shares. Subsequent private sale of 70 percent to Vodafone (UK) in August 2008 for \$900 million.
Guinea	Sotelgui	December 1995	60	45	0	Renationalized in 2008 following private sale to Telekom Malaysia.
Guinea-Bissau	Guinée Telecom	1989	51	3	0	Renationalized following private sale to Marconi (later assumed by Portugal Telecom).
Kenya	Telkom Kenya	December 2007	51	390	51	Sale to consortium led by France Telecom (78.5 percent) with Alcazar Capital Ltd. (21.5 percent).
Lesotho	Telecom Lesotho	November 2000	70	—	70	Private sale to Mountain Communications (Econet) (Zimbabwe), Mauritius Telecom, and Eskom (South Africa). Sale price not disclosed.
Madagascar	TELMA	August 2003	34	12.6	68	Private sale to Distacom (Hong Kong, China), which also purchased France Telecom's ownership.
Malawi	Malawi Telecom (MTL)	February 2006	80	30	80	Private sale to Telecom Holdings Ltd. (THL) consisting of PCL (50.1 percent), Old Mutual (16.1 percent), NICO (5.0 percent), Detecon (Germany) (2.6 percent) and Press Trust (6.2 percent). Percentages refer to MTL ownership.
Mali	SOTELMA	July 2009	51	384	51	Private sale to Maroc Telecom.
Mauritania	Mauritel	April 2001	54	48	54	Private sale to Maroc Telecom, which subsequently engaged in a series of sales with local investors. Its ownership stood at 51 percent in 2008.
Mauritius	Mauritius Telecom	November 2000	40	261	40	Private sale to France Telecom.
Niger	SONITEL	November 2001	51	16	51	Private sale to Chinese and Libyan consortium. Government has announced intention to renationalize.

Nigeria	NITEL	July 2006	51	500		Private sale to TransCorp (Nigeria). Government has rescinded the sale and was in process of reprivatizing in 2010.
Rwanda	Rwandatel	June 2005	99	20	80	Initial private sale to Terracom (United States), which government later repurchased. Libya Arab Portfolio later acquired an 80 percent interest for \$100 million.
São Tomé and Príncipe	CST (Companhia Santomense de Telecomunicações)	1989	51	1	51	Private sale to Portugal Telecom.
Senegal	Sonatel	July 1997	33	90	73	Initial private sale to France Telecom. Subsequent additional sale to France Telecom and listing on regional stock exchanges.
Seychelles	Cable and Wireless Seychelles	1981	49	n.a.	100	Government granted the British company Cable and Wireless the right to operate the telephone network, inaugurated in 1954. Cable and Wireless was subsequently privatized by British government in three tranches (1981, 1983, and 1985).
South Africa	Telkom	May 1997	30	1,261	34	Initial private sale to Thintana Communications (SBC [United States] 60 percent) and Telekom Malaysia (40 percent). Global initial public offering in March 2003 of 47 percent. Thintana Communications sold 14.9 percent interest in Telkom to South African and international institutional investors in June 2004 and its remaining interest to the Public Investment Corporation, wholly owned by the South African Government in November 2004. Subsequent Telkom share repurchases have altered its level of private shareholding.
Sudan	Sudatel	1997	n.a.	n.a.	36	Multiple share offerings on local and regional stock exchanges.
Tanzania	TTCL (Tanzania Telecommunications Company Ltd.)	February 2001	35	65	35	Private sale to a consortium of MSI (Netherlands) and Detecon (Germany).
Uganda	Uganda Telecom	May 2000	51	34	69	Initial private sale to UCOM consortium consisting of Detecon (Germany), Telecel (Switzerland), and Orascom (Egypt). UCOM ownership subsequently purchased by Libyan Arab Portfolio (LAP), which then increased its ownership through a capital increase.
Zambia	Zamtel	June 2010	75	394	n.a.	Privatization of 75 percent stake sold to LAP Green (Libya) for \$394 million in 2010.

Source: AICD 2009; Business Monitor International (BMI) database (<http://www.businessmonitor.com/>).

Note: n.a. = Not applicable. — = Not available.

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