

Dial Growth

Handheld devices are enabling nascent economies to skip a generation of development

Man on cell phone in Rajasthan, India

ACROSS the developing world, mobile telephones are enabling countries to bypass what was once an unavoidable stage of development: the establishment of a national mail service and of land-based telecommunications. The falling unit cost, ease of use, and ever-expanding reach of mobile telephony are enabling developing countries to “leapfrog” a phase in economic evolution that once took decades to traverse.

Mobile telephones are revolutionizing the formative processes of economic development. These relatively cheap handheld personal communicators are empowering the most basic development agents, turning former functionaries reliant on erratic and remote external inputs into key decision makers with direct access to the facts they need.

In less than a generation, mobile telephony has transformed agriculture, marketing, fisheries, freight logistics, irrigation, banking, and small business in the developing world. But there are stiff upfront costs, and daunting risks, in establishing mobile telephone networks in developing countries. In this article, first Olivier Lambert looks at how foreign direct investment in developing-country telecommunications sectors is enabled and supported. Then Elizabeth Littlefield focuses on the mobile telephone function with perhaps the greatest potential development multiplier: mobile banking. Once telecommunications-sector investment is assured and once small-scale economic agents have easy and mobile access to the accelerant of financial intermediation, the article will show, more rapid development can but follow.

Short cut—at a price

Olivier Lambert

AN advantage of “leapfrog” development is that the developing country can skip or bypass stages of economic or technological evolution that were previously rites of passage for economies embarking on industrialization. Thus largely rural, primary product-exporting economies can now install state-of-the-art, large-scale wireless communications systems at a stroke. However, hand in hand with old-fashioned incremental development went equally incremental and graduated financial requirements. The disadvantage of “leapfrog” development is that it requires early and substantial capital outlays and infrastructure commitments well ahead of any payoff. Investment guarantees therefore assume a high profile.

After nearly a decade of conflict and political instability, the West African state of Guinea-Bissau is one of the poorest countries in the world. Civil war and a coup d'état have

left a legacy of deteriorated physical infrastructure, weakened administrative and policy implementation capacity, unsustainable fiscal deficits, and heavy reliance on donor support. But the country abuts a more stable and prosperous neighbor, Senegal. The Senegalese telecommunications operator Sonatel invested \$25.8 million in a fully digital cellular network in Guinea-Bissau that was launched in May 2007. Sonatel had a partner in its venture: the Multilateral Investment Guarantee Agency (MIGA)—the World Bank Group's political risk insurance arm.

MIGA issued a guarantee to Sonatel for its equity investment in, and shareholder loans to, its subsidiary in Guinea-Bissau, Orange Bissau. Sonatel is covered against the risks of transfer restriction, expropriation, war and civil disturbance, and breach of contract. Sonatel's investment involved the installation, operation, and maintenance of a cellular network, as well as public pay phones and internet services that are critical to Guinea-Bissau, a country that has long suffered

New networks

The mobile phone market is especially important for developing countries, where virtually all new mobile customers in the coming years will be located.

(mobile phone subscriptions in developing and developed countries, in millions)



Source: International Telecommunication Union (ITU), World Telecommunication/ICT Database.

from low levels of investment. As of end-2008, the network had signed up 60,000 subscribers.

A study by the World Bank (2009b) supports the assertion that information and communications technology is a vehicle for growth. It points to the importance of mobile communications in rural areas, which are home to nearly half of the world's population and 75 percent of the world's poor. "The mobility, ease of use, flexible deployment, and relatively low and declining rollout costs of wireless technologies enable them to reach rural populations with low levels of income and literacy. The next billion mobile subscribers will consist mainly of the rural poor."

Generation M

The mobile phone market is especially important for developing countries, where virtually all new mobile customers in the coming years will be located (see chart and Box 1). MIGA has supported telecom investments in Benin, the Central African Republic (CAR), Ghana, Guinea, Guinea-Bissau, Mali, Mauritania, Nigeria, and Sierra Leone.

In the CAR, which ranked 180th out of 181 countries in ease of doing business in the World Bank's 2009 *Doing Business* report, attracting foreign investment has been difficult. In 2008, MIGA issued a guarantee of \$37.9 million for the installation, operation, and maintenance of a state-of-the-art CAR telecommunications network. The guarantee covers 90 percent of the investor's equity investment, protecting it against the risks of transfer restriction, expropriation, war and civil disturbance, and breach of contract. The project is vital to the economic development of the landlocked country, where fixed-line phone connections are not available to even 1 in 100 people. Subscribers benefit from access, reliable service, and reduced costs due to increased competition and diverse product offerings (see Box 2). In less than a year the network, Orange Centrafrique, had signed up 127,000 subscribers, indicating an eager consumer base. ■

At an m-bank near you

Elizabeth Littlefield

MOBILE phones can serve as a platform for bringing a country's citizens into the formal financial system, thus integrating them directly into the economic development process. Financial institutions are now offering mobile banking systems that allow customers to transfer funds to busi-

Box 1

Portable development

Just a decade ago, there were still some countries with no mobile service at all. Since then, wireless telephone coverage has enveloped the globe. Mobile phone subscriptions have skyrocketed from 1 billion in 2002 to an estimated 4.1 billion by the end of 2008, covering more than half of the world's population. The fastest growth rates have been in low-income countries. In Africa mobile phone penetration has soared from just 1 in 50 people at the turn of the century to 28 percent.

The World Bank (2009b) says this growth has been driven primarily by new wireless technologies and liberalization of telecommunications markets, which enabled faster and less costly network rollout. The total number of mobile phones in the world surpassed the number of fixed-line telephones in 2002; and mobile phones now represent the world's largest distribution platform.

Box 2

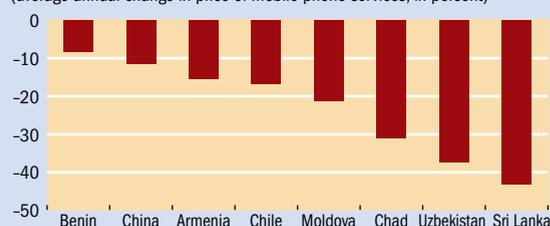
Cheaper chat

The price of access to information and communication technology (ICT) continues to fall due to technological advances, market growth, and increased competition, a trend that is especially important in allowing people in developing countries to take full advantage of ICT services. The World Bank (2009b) says that in recent years, steep price reductions have contributed to the rapid expansion in mobile phone use in many countries (see chart). Increased use of prepaid service allows mobile customers to make payments in small amounts instead of having to commit to fixed monthly subscriptions, leading to higher penetration rates in poor and rural areas.

Good reception

In recent years, steep price reductions have contributed to the rapid expansion in mobile phone use in many countries.

(average annual change in price of mobile phone services, in percent)



Source: International Telecommunication Union (ITU), World Telecommunication/ICT Database.

Note: Mobile price basket is based on the Organization for Economic Cooperation and Development low user definition and is calculated based on the prepaid price for 25 calls per month spread over the same mobile network, other mobile networks, and mobile to fixed calls and during peak, off-peak, and weekend times.

nesses and families, often radically bringing down transaction costs. Ten years ago, mobile banking or "m-banking" might have meant minivans that served as bank branches on wheels. Today, mobile banking means mobile phones and other wireless devices that offer basic transaction services in every continent.

Poor households have more complex financial needs than many realize. They save by buying building materials or live-

stock, get advances against burial societies or from shops, receive remittances, and deposit funds with neighbors. Collins and others (2009) show that households in Bangladesh use at least four informal and formal financial services, and one-third use more than 10 services. Most of these services are inconvenient, costly, and risky.

Using technology to deliver services promises to improve cost, security, and convenience for poor people, while making it commercially viable to serve them. Breadwinners in urban markets who used to carry cash home to their villages can now send electronic value home via mobile phones, saving time and money. Travelers who ran the risk of robbery now store value on mobile phones before a long trip, and then withdraw it at an agent at their destination.

Today, branchless banking channels are widely accepted as a way to extend the banking system to rural and remote areas. Banking correspondents—or agents—in post offices, gas stations, or mom-and-pop stores are increasingly seen as a way to convert electronic messages from phones or cards with point-of-sale devices into cash in the hands of poor people. Technology and the business models to turn it into a service for customers are developing in tandem. The Consultative Group to Assist the Poor (CGAP), an independent policy and research center housed at the World Bank, found in a study that there are more than a billion people worldwide who have a mobile phone but no bank account. The 147-country study, conducted with the Group Spéciale Mobile Association, estimated that up to 360 million of these unbanked, low-income people could be signed up to mobile phone-based financial services by 2012. Mobile network operators are aware of this, motivated by saturated rich-country markets and by declining revenues per user as they move into poorer countries. Operators also know mobile phone banking makes customers less likely to switch providers.

Easier, faster, cheaper, safer

The biggest success in customer adoption to date has been the M-PESA network in Kenya, which has reached more than 6.5 million customers in just over two years. It has become the preferred method for moving money for 50 percent of Kenyans. An average of 150 million Kenya shillings (\$1.96 million) is transferred through the network every day, mostly in small amounts averaging just over K Sh1,500 (\$20) per transaction. CGAP analysis and a survey by the nongovernmental organization Financial Sector Deepening Kenya show that users like the fact that the network is faster, easier to access, and safer than the alternatives. But cost probably trumps other factors as it beats the cheapest formal alternative by 45 percent. To send \$25, the post office charges 5 percent and Western Union charges 57.5 percent; but the fee with M-PESA would be 2.8 percent. In other words, using M-PESA puts \$4 million a week into the hands of poor Kenyans.

However, fewer than 1 in 10 mobile phone banking customers are actually poor, new to banking, and doing anything more than payments and transfers. Most of the new offerings, especially when led by existing banks, have served to provide more convenient bill payments for existing customers and

to decongest branches. To reach new, poor customers with a broader range of mobile financial services, their needs and preferences will need to be applied to product design, pricing, and marketing strategies. Software needs to be intuitive in different cultural settings. Hardware needs to have features that make it practical in rural settings where electricity may be scarce.

Wider m-banking signups are unlikely to happen without merchants acting as banking agents. The agents' incentives are the commissions, and possibly also increased foot traffic of more buyers entering the store. M-banking commissions still fall short of what merchants earn from other products. Filipino agents make a 10–12 percent margin on selling toothpaste, but only 1–3 percent for an m-banking cash-in transaction. But evidence from other countries suggests that as m-banking takes off, volumes and ticket size can more than make up the difference.

Role for policymakers

Governments are increasingly seeing the convergence of banking and technology as an opportunity to expand access to finance. Five key issues arise on the regulatory side.

- Allowing nonbank agents, such as local stores, to offer “cash-in/cash-out” services to customers. Of the countries that permit the use of agents, an estimated 65 percent *permit agents to handle deposits*.
- Adopting a risk-based approach to anti-money laundering and countering terrorist financing rules. Many countries now allow agents to *perform customer screening*.
- Determining the *role of nonbank actors* in issuing e-money and processing electronic payments.
- Protecting consumers from new risks presented by *branchless banking* business models, and
- *Competition policies* that encourage innovation but protect against customer-unfriendly monopolies.

In country after country, technology is revolutionizing the way people can get basic financial services. Enabling all poor people to benefit from technology-enabled financial access will require work at many levels. But easy participation, soaring penetration, and irresistible economics have already ensured that the deployment of mobile telephony as a development aid is here to stay. ■

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