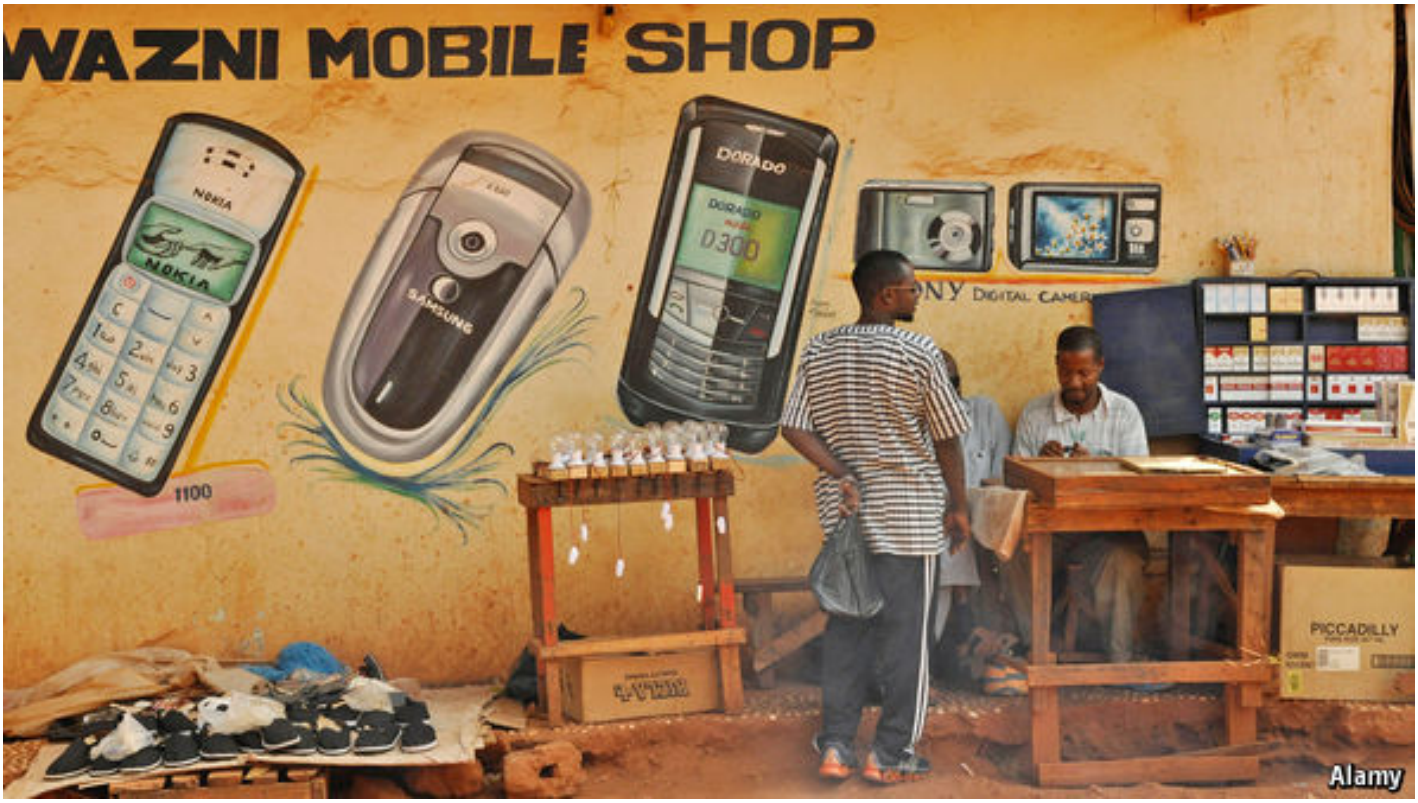
Continental disconnect

Mobile phones are transforming Africa

Mobile phones are transforming Africa, where they can get a signal



Print edition | Middle East and Africa ›
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DRIVE a few miles from the centre of Accra, the capital of Ghana, into the neat rows of houses that surround it and the paved roads disappear almost as quickly as the phone lines. Yet this has not dented the ambitions of Kwami Williams, a graduate of the Massachusetts Institute of Technology (MIT) who is building a business processing moringa trees and exporting the resulting tea and cosmetic oils. Before mobile-phone usage exploded across Africa, starting a venture such as this on a shoestring would have been impossible—the costs of communicating with the thousands of smallholders who grow the trees would have been prohibitive. Now this business supports some 1,500 farmers.

Across Africa, similar magic is being wrought as phones spur innovation and boost incomes: farmers use them to check market prices before selling to middlemen, and market traders can accept payments in mobile money. A study by academics from MIT, published this week, found that simply by gaining access to M-Pesa, Kenya's mobile-money service, 2% of Kenyan households were lifted out of poverty between 2008 and 2014.

The precise impact of phones on economic growth is notoriously difficult to measure (although that does not stop trade bodies and consultants from issuing gushing reports filled with unnervingly exact numbers). The GSMA, an international trade body, argues that for every 10% increase in phone penetration in poor countries, productivity improves by more than four percentage points, and that a doubling in mobile-data usage increases annual growth in GDP per person by half a percentage point. Yet more may be in store as Africa stands on the cusp of a second mobile-phone revolution.

A decade ago there were only 129m mobile-phone subscriptions in the whole of Africa, though even that was already ten times more than the number of fixed-line phones. But since then the number of active subscriptions has jumped to almost 1bn. At first blush that would suggest that just about every African (there are 1.2bn of them, with north Africa included) now has a phone. In fact, a large number of Africans have are

consummate *arbitrageurs* of tariffs, switching SIM cards in and out of their phones depending on whom they are calling. Dig a little deeper into the data and it turns out that fewer than half of Africans have phones. Those who do tend to live in cities and are richer and better educated than the half who do not. The latter risk being left even further behind.

This divide is even more extreme when it comes to gaining access to the internet. Although mobile phones have revolutionised the way Africans get online—most have jumped to cyberspace directly on their phones rather than on computers connected through fixed lines—many are still not connected to the world. The International Telecommunication Union (ITU) reckons that three-quarters of Africans do not use the internet, compared with just 21% of Europeans (see map).

There are two main reasons why so many Africans lack even simple phones. The first is that Africa is a very large continent in which the majority of people are scattered among farms and small villages. Powering phone masts in remote areas is a challenge: phone companies typically rely on expensive diesel generators that need regular refuelling. And the masts also need a way to transmit calls and data to and from the broader network, so phone companies spend another fortune laying cables or buying bandwidth on satellites to do so. Little wonder, then, that only around 43% of Africans can get a 3G data signal, and just 16% can get one offering fast (4G) mobile broadband.

The costs of downloading data are also higher in Africa than in most other parts of the world, in part because the bytes have to get there on long submarine cables and then snake their way inland over thousands of miles of rough terrain. Of the ten countries with the highest fixed-broadband costs in the world, seven are in Africa. They include landlocked Uganda, Rwanda and Burundi; Chad tops the list at $501 a month for a connection. Poverty compounds the problem, particularly in sub-Saharan Africa where about 40% of people live on less than $1.90 a day. Phone companies have little reason to expand their coverage into villages if people there cannot pay enough to make it profitable.

Yet several technological changes may soon lead to another sudden shift in phone and internet use in Africa. The first is a rapid fall in the cost of connecting Africa to the rest of the internet. New cables gird the continent and reach inland, increasing competition and driving down costs. Firms such as Google are installing fibre networks in cities such as Accra and Kampala in a bid to drive down the costs of data. Satellites are improving, too. Michel Azibert of Eutelsat, a satellite firm, says advances in technology mean that the cost of transmission capacity will fall to a fiftieth (about $1m per gigabyte) by 2020 compared with older satellites.

The last, and perhaps most important, changes include innovations that dramatically lower the cost of serving remote villages. Firms such as Nuran Wireless and Vanu are working on small, solar-powered mobile masts, which can be erected and operated for less than a quarter of the cost of conventional ones. The masts beam low-power signals that do not travel far, but they do away with the need for a generator. Such improvements may allow firms to make a profit from villagers spending as little as $2 a month to talk on their phones. Others, including Eutelsat, are looking at ways of beaming satellite internet down to base stations that then distribute it across a village using cheap Wi-Fi equipment.

Unfortunately, in many countries mobile-phone companies are an easy source of tax. In Tanzania, for instance, phone companies pay almost half their revenues to the government. In Ghana the cost of handsets is inflated by taxes of almost 38%. A second mobile-phone revolution in Africa would do much to boost its economies and transform the lives of its people. But it will not happen if governments keep standing in its way.

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Second time unlucky

Israel’s prime minister will desperately struggle to stay in office

Binyamin Netanyahu is down but not out