



A South African cricket supporter takes a photo using a mobile phone on the fifth day of the 2nd Cricket Test between South Africa and India at Kingsmead stadium in Durban, South Africa, in December 2006. South Africa has the highest mobile phone penetration, with 724.3 phones per 1000 people, in all of Africa, according to the World Bank. (Themba Hadebe/Associated Press)

IN DEPTH

Technology in hand

Picking locks

Will mobile phone adoption pave the way for a wired Africa?

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By Paul Jay, CBCNews.ca

Last month in Uganda, local conservation groups were successful in halting the planned sale of a section of the country's Mabira rainforest after collecting over 11,000 names on a petition. It was an effective campaign, but what was unique was the way in which the petition was collected: not with pen and paper, but rather, by collecting names through an online petition people could access through their mobile phones.

It's a small example, but one of many in Africa, a continent where mobile phone use continues to

grow. In 2001, mobile phones overtook fixed telephone lines as the main form of telecommunication in Africa, and they now outnumber fixed lines by nearly seven to one, according to the UN's International Telecommunication Union (ITU).

As a result of its relative ubiquity, the mobile phone has taken on so many roles that it is no longer thought of as just a phone, said George Kagame, a journalist living in Kigali, Rwanda.

"Mobile phones are now more than a communication tool. In Europe they are now called mobiles, not mobile phones," Kagame wrote in a correspondence through the social networking website Facebook.

At an ITU-sponsored summit at the end of October in Kigali, Rwandan President Paul Kagame (no relation) took his praise of the device a step further.

"In just 10 years, what was once an object of luxury and privilege ... has become a basic necessity in urban and rural Africa," President Kagame said.

Six years after mobile phones became the dominant form of telecommunication in Africa, some are wondering whether the portable technology could be called on to leapfrog another technology: the personal computer.

Phones versus laptops

"If you asked me how people in the developing world are going to access the internet, I'd say it would be the mobile phone," said Ken Delaney, an analyst with U.S. technology research firm Gartner. "A mobile phone can be used more places than a laptop, and the infrastructure for mobile phones is already coming into place," he said.

It's a sentiment Microsoft founder Bill Gates first articulated in January 2006 at the Consumer Electronics Show, when he played down the potential success of the charitable One Laptop Per Child program, with its goal of providing low-cost laptop computers to the developing world. Microsoft's vice-president and chief technology officer, Craig Mundie, seconded the notion in an interview with The New York Times last year, in which he said mobile phones were a better way to bring the internet to a wider range of people.

"Everyone," Mundie said, "is going to have a cellphone."

Not everyone has a mobile phone in Africa, but use of the devices is growing faster than in any other region of the world. In a continent with a population just over 900 million, there were nearly 193 million



A disabled Kenyan displays phones on the back of his tricycle, hooked to a mobile communication network that provides public call services in the

mobile cellular subscribers in 2006, a figure projected to grow to 270 million by the end of 2007, according to the ITU.

capital, Nairobi. Such vendors provide communications access to Africans without a mobile phone of their own. (Sayyid Azim/Associated Press)

It's a small percentage of the total number of mobile phones worldwide, which stands at over three billion, according to British-based telecoms analysis company The Mobile World. And people in African nations are not equally serviced, either; South Africa has the highest mobile phone penetration, with 724.3 phones per 1000 people, while Ethiopia has the lowest with 5.8 per 1000 people, according to the World Bank.

Multiple uses for mobile

Even though it's not omnipresent, the mobile phone has become the de facto technology in the continent. It has done so in part because of the lack of landline infrastructure, but also because of a lack of infrastructure in general. In a land of scarce services, mobile telephony has become the great enabler.

Right now, the mobile phone is the only technology that matters to Africans, George Kagame said.

"Africa has been deprived of connectivity because of lack of proper mechanisms like information communication technology infrastructure," Kagame wrote. "For many, and only in urban centres, their use of ICT is limited to mobile phones ... [with only] a limited knowledge of the computer."

He points to the use of mobile phones as a tool for the protestors in Uganda but also as a tool for medical outreach in Rwanda, where the Treatment and Research AIDS Center in Kigali is able to regularly review patient information and share it through text messaging.

The different needs of the region have led to different applications, said Tejas Rao, technology director for Nokia Canada. For example, a lack of financial institutions has led more mobile customers in developing countries to use their phones as a means of "wiring" money to relatives.

Most of these devices buy minutes of airtime through the use of prepaid cards, and such minutes can be transferred from phone to phone, making airtime a valuable commodity, Rao said — and, in some cases, even a currency of its own. And since many families share one phone, the handset operators look to add features that allow multiple phone books on one device, he said.

Leapfrogging computers?

Africa isn't the only area where mobile phones have allowed a region to forgo a technology. For example, after credit cards failed to take off in Japan and South Korea, the two countries moved toward mobile payments, Rao said.

Leapfrogging personal computers to use mobile phones as a means of accessing the internet may seem a bit of a stretch in Africa, however, since most mobile phones on the continent sell for between \$20 and \$40 US and have few features beyond talk and text. It also appears an unaffordable switch for most Africans, who in many countries earn less than a \$1 a day.

As a journalist, George Kagame uses his mobile phone constantly, but most of the time, he said, just to receive calls, which is free.

"My salary is too small to afford to make regular calls," he said. "Many Rwandans cannot afford to buy mobiles. Though in certain areas in the country a mobile phone is still considered a status symbol."

But the alternatives are bleak. The average delay for a business in Rwanda to obtain a landline telephone connection is 62 days, and only five per cent of the population has access to electricity, according to the 2007 *Little Data Book on Africa*, a publication of the World Bank. And computers are rare in the country, Kagame said.

Laptops becoming less expensive

That is starting to change, as lower prices for components and the use of inexpensive open-source software has helped manufacturers bring computers to the developing world.

On Nov. 12, the U.S.-based One Laptop Per Child program began the first shipments of its \$200 US XO laptop to Uruguay, and it is expected to distribute the devices to Rwanda and Ethiopia, as well as Peru,

Mexico, Haiti, Cambodia and India by the end of the year.

Earlier this year, Taiwanese computer manufacturer Asus also began selling its Eee PC, a low-cost laptop available for under \$300 US in some regions.

And at the ITU-sponsored summit in Kigali, computer chip manufacturer Intel also announced it would donate 3,000 Classmate low-powered notebooks to Nigeria's federal Ministry of Education, adding to the 250 sent a year ago as part of a pilot project.

For many observers, the debate concerning the new wave of low-cost laptops is whether the commercial ventures of Intel and Asus will win out over the charitable One Laptop Per Child program. But technology analyst Delaney said laptops in general might lose to mobile phones as the devices get better software and the continent gets a better broadband infrastructure.

"If you can get a mobile phone with a browser-based interface, I think it will be the better choice," he said.

George Kagame is encouraged by the efforts of groups like One Laptop Per Child, and said if they were available, people might use laptops. But he said the mechanisms needed to bridge the digital divide go beyond the technology itself.

"Our problems here are not computers," he said. "It's finding work, feeding ourselves and even going to school."

