

The un-wired continent: Africa's mobile success story

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In 2004 alone, the African continent added almost 15 million new mobile cellular subscribers to its subscriber base, a figure equivalent to the total number of (fixed and mobile) telephone subscribers on the continent in 1996, just eight years earlier.

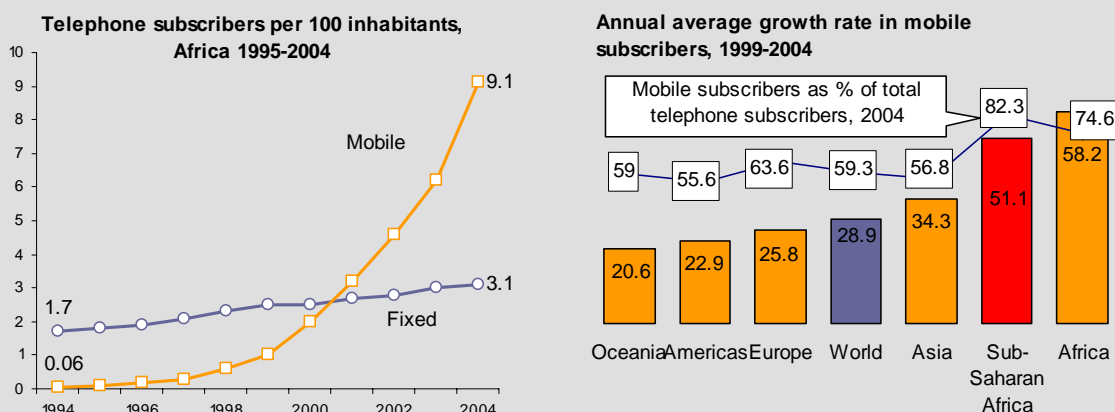
Over the last decade, Information and Communication Technologies (ICT) have been growing at great speed, always exceeding global economic growth and changing the way people work, entertain, shop, communicate and organize their life. This growth has been driven by both demand-side factors, such as the increasing popularity of mobile phones and the Internet, and by supply-side factors such as regulatory reforms, falling costs, and technological innovation.

The story of African telecommunications is undoubtedly mobile. The number of mobile subscribers passed the number of fixed lines in Africa in 2001 and the total number of mobile subscribers at the end of 2004 stood at 76 million. The mobile penetration of 9.1 per 100 inhabitants was nearly three times the fixed rate (Figure 3.1, left). It is obvious that mobile has been critical for enhancing access to telecommunications in a region where fixed lines remain very limited. While on average there are only three fixed lines for 100 Africans, the rate is even lower in Sub-Saharan Africa, where it stands at 1.6 to one hundred. In Nigeria, Africa's most populated country, for example, mobile telephony has helped to increase total telephone penetration from 0.5 to 8 percent between 1999 and 2004 (Box 1.1).

By 2004, almost 75 percent of all African telephone subscribers used mobile; the figure was even higher in Sub-Saharan, where more than four out of five telephone subscribers use a mobile. This is the highest ratio of mobile to total telephone subscribers of any region in the world. Africa's mobile market has also been the fastest growing of any region over the last five years (Figure 3.1, right).

Figure 3.1: Mobile in Africa

Mobile and fixed telephone subscribers per 100 inhabitants in Africa, 1995-2004 (left) and annual average percentage growth in mobile network subscribers, 1999-2004, world regions (right)



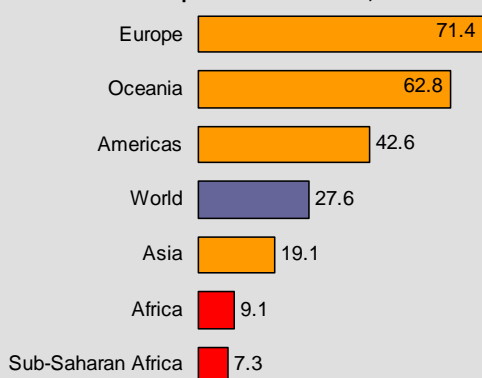
Source: ITU World Telecommunication Indicators Database.

Despite these advances and high growth rates even in Sub-Sahara Africa¹, the continent's overall mobile penetration is the lowest of any region at 9.1 percent in 2004, compared to the global figure of 27 (Figure 3.2, top left). In Sub-Sahara Africa, an average of 7.3 percent of the population has a mobile phone. In some Sub-Saharan countries, including Ethiopia, still less than one out of 100 people have a mobile phone (Figure 3.5).

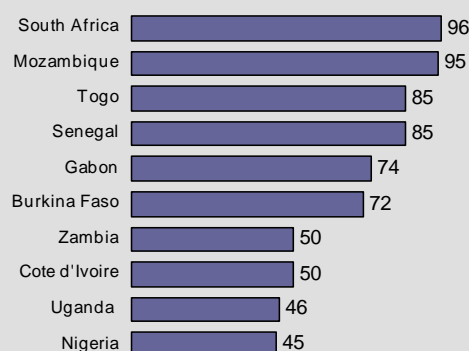
Figure 3.2: Characteristics of the African mobile market

Mobile subscribers per 100 inhabitants, world regions and Sub-Sahara Africa, 2004 (top left) and percentage of population covered by mobile cellular signal, selected African countries, 2003/2004 (top right); mobile market structure in Africa, 1993-2004 (bottom left) and pre-paid mobile subscribers as a percentage of total mobile subscribers, world regions, 2004 (bottom right).

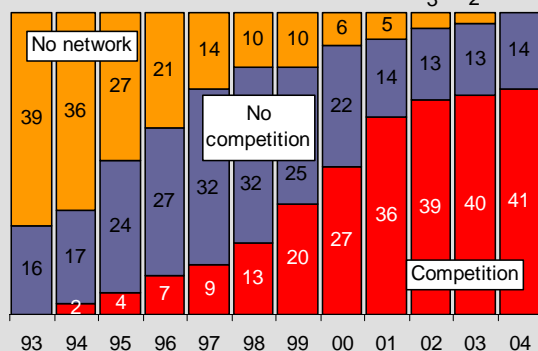
Mobile subscribers per 100 inhabitants, 2004



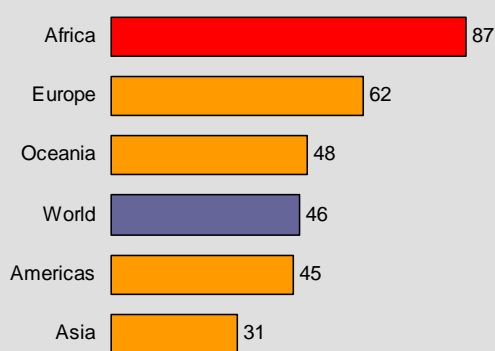
Percentage of population covered by mobile cellular signal, selected African countries 2003/2004



Mobile market structure in Africa, number of countries



Prepaid mobile subscribers as % of total subscribers, 2004



Source: ITU World Telecommunication Indicators Database and ITU World Telecommunication Regulatory Database (bottom left, only)

There are a number of reasons for the success of mobile telephony. A critical one is the ability of mobile operators to provide mobile coverage more rapidly. For investors, mobile networks are often easier to deploy, operate and manage than conventional fixed lines, making wireless a logical business decision. While fixed telephones are often limited to major African cities, it is estimated that by the end of 2004, over 60 percent of the population in Africa was within range of a mobile signal, although differences between countries persist (Figure 3.2 top right). Inhabitants who are covered by a mobile

¹ While the entire African continent is home to 56 countries, sub-Sahara Africa is the region that describes those 51 countries that lie below the Sahara. It excludes the 5 North African countries of Morocco, Tunisia, Egypt, Libya and Algeria.

cellular signal have the potential to subscribe to the networks, whether or not they actually do so. Notwithstanding the fact that mobile operators have vastly extended access to telecommunications, there is still need to provide access to those who have been excluded, mainly rural dwellers and lower income citizens. A number of governments, including South Africa, Kenya and Uganda, have obliged mobile operators to provide a certain population coverage as part of their license conditions and/or require them to install community service telephones.

A high degree of liberalization and competition in the mobile sector has also contributed to expanding mobile services, by bringing down prices and making operators more service-oriented. Indeed, by the end of 2004, the large majority of African countries had moved from monopoly run operators, to competitive markets (Figure 3.2, bottom left). Over the same period, a considerable reduction in mobile tariffs has been able to make services more affordable and within the reach of even low-income groups. Current efforts of leading mobile handset manufacturers to further reduce the price of mobile handsets and to come up with some functional so-called "Ultra-Low-Cost Handsets" specially designed for low-income markets, will further drive growth rates.

Box 3.1: Nigeria: The Sub-Saharan giant striding ahead

One of Sub-Sahara's biggest mobile success stories is taking place in Nigeria, the continent's most populated nation. With an estimated 130 million inhabitants, Nigerians represent no less than 15 percent of the continent's population. Despite large oil reserves, several decades of mismanagement and political instability left the country's economy in ruins. With democratic elections in 1999 came a strong commitment to good governance and economic reform, particularly through market liberalization across all sectors.

This reform has had a dramatic impact in the telecommunication sector through the licensing of four mobile operators (three in 2001 and a fourth in 2002). Mobile subscribers increased from a mere 25'000 in 1999 to 9.1 million in 2004 (Box Figure 3.1, left) and Nigeria's mobile network has been one of the fastest growing on the African continent over the last years. This boosted total telephone penetration (mobile and fixed) from 0.5 to 8 percent over the same period.

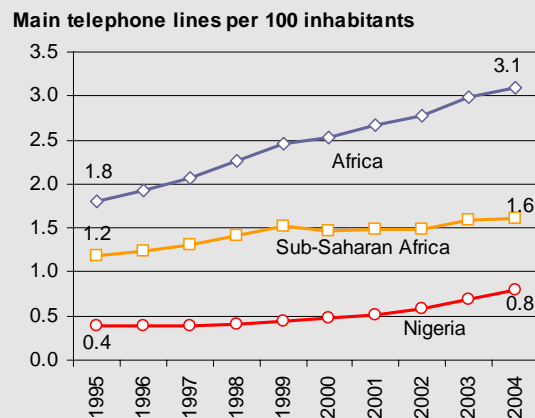
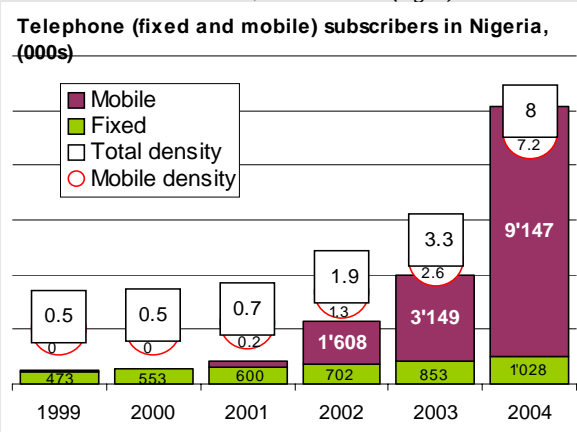
When Globacom, the fourth licensed operator joined the Big Three – MTN, M-Tel (the mobile arm of the incumbent NITEL), and V-Mobile (formerly Econet) - in August 2003, the additional competition brought greater innovation, lower tariffs and a number of creative tariff schemes to attract new customers.

One of the reasons for this mobile success is the very limited coverage of the fixed line network. With a limited fixed line infrastructure – penetration rates are low even for Sub-Sahara Africa – and service basically limited to urban centres, most Nigerians have long been deprived of telecommunications (Box Figure 3.1, right).

Liberalization in the sector is overseen by the Nigerian Communication Commission (NCC), a financially and operationally independent body whose approach to better services for more users is primarily market driven. Its emphasis is on creating the right competitive environment to foster universal access.

Box Figure 3.1: Nigeria's mobile boom

Fixed and mobile growth and penetration in Nigeria, 1999-2004 (left) and fixed line penetration in Nigeria compared to Africa and Sub-Sahara Africa, 1995-2004 (right)



Source: ITU World Telecommunication Indicators Database.

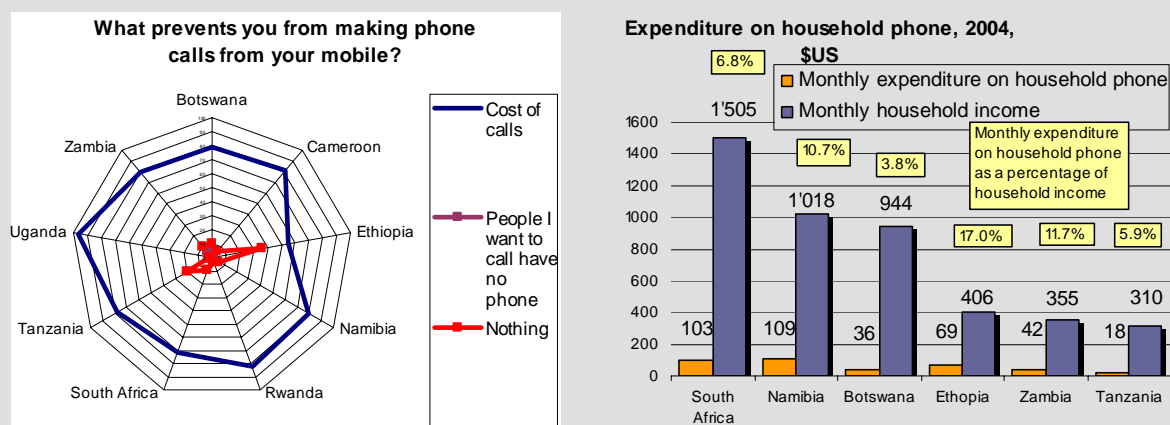
Finally, prepaid has played a major role in the mobile boom. Prepaid mobile lowers the threshold of telephone ownership by making services available to those who would not normally qualify for a subscription-based package and represents not risk to the operators. Prepaid mobile is not marred by billing problems faced by fixed line operators in almost all African countries. The costs of getting connected are also lower for mobile than fixed telephones, often just the cost of a SIM card and increasingly a subsidized or inexpensive handset. An impressive 87 percent of mobile subscribers in Africa have chosen a prepaid service, the by far largest ratio worldwide (Figure 3.2, bottom right).

It is not enough to look at the spread of mobile telephony to understand the impact that the mobile phone has made. Besides providing many rural areas that used to be excluded from any form of communication with access, the mobile phone has improved people's lives in many ways. In Uganda, for example, farmers can use their mobile phone to find out about the latest crop prices. Instant and direct access to market prices increases their revenues, provides them with valuable information to negotiate and protects them from being cheated by middlemen. The service reaches millions of farmers

every week². In South Africa, the Compliance Service uses SMS to remind tuberculosis (TB) patients to take their medication. TB patients must strictly follow a difficult drug regime over an extended period but often fail to do so simply because they forget. Non-compliance with the drug treatment has exacerbated TB cases and been a burden on the local health care service by wasting precious medicines. The project, which started in Cape Town in 2002, has substantially decreased the number of treatment failures.

Figure 3.3: Cost and value of the mobile phone

Reasons for not making phone calls from the mobile phone, various Sub-Saharan countries, 2004 (left) and monthly household income and household expenditure on household phone, selected Sub-Saharan countries, 2004 (right)



Source: ITU adapted from researchICTafrica.net

Note: Right chart: \$US converted at implied PPP conversion rate for 2004.

The value of the mobile phone is also highlighted in a recent study that was carried out in 10 Sub-Saharan countries. While high costs remain the main barrier to making phone calls in every country surveyed (Figure 3.3, left), people are prepared to spend relatively large amounts of their income on telecommunications.³ In Namibia, Ethiopia, and Zambia, for example, households spend more than ten percent of their monthly household income on the phone. Households in South Africa and Tanzania spend 6.8 and 5.9 percent, respectively. This compares to an estimated three percent in most developed countries.

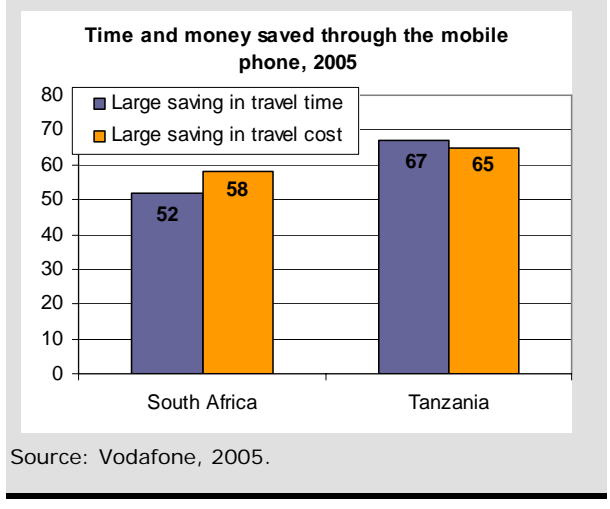
The fact that developing countries' expenditure on telecommunications makes up far more of household income than in developed countries suggests that people value access greatly and are prepared to pay proportionally more. This is equally true for the average rural household, where incomes are particularly low. Research suggests that low-income households are prepared to spend relatively large amounts of their revenue on telecommunications because it helps them save money in other areas. The value of mobile phones is particularly great because other forms of communication (such as postal systems, roads and fixed-line phones) are often poor. Mobiles provide a point of contact and enable users to participate in the economic system. A survey carried out in South Africa and

² BBC News, at <http://news.bbc.co.uk/2/hi/world/africa/3321167.stm> and <http://ictupdate.cta.int/index.php/article/articleview/313/1/59/>

³ ResearchICTafrica.net. Towards an African e-index. Household and Individual ICT access and usage across 10 African countries. Edited by Alison Gillwald. 2005, at: <http://www.researchictafrica.net/images/upload/Toward2.pdf>

Tanzania, for example, showed that mobile phones helped save money and time. In Tanzania, two thirds of the surveyed population recorded large saving in travel time and cost (Figure 3.4). The same study⁴ produced evidence that mobiles improve relationships with friends and family and help small businesses operate more effectively. In South Africa, 62 percent of small businesses affirmed that they had increased their profits as a result of the mobile phone and 85 percent of those surveyed in Tanzania said they had more contact and better relationships with family and friends as a result of mobile phones.

Figure 3.4: The impact of using a mobile phone



Mobile phones were also instrumental for job hunters, not only because they helped them obtain information and apply for a job, but also because it was a means of being contacted by potential employers. This is why it is not surprising that the (economically active) 25-45 age group is the one with the highest use of mobile phones.

The impact of the mobile phone in Africa is impressive. The statistics and survey findings presented here highlight that within just a few years the mobile phone has managed to overtake the fixed line market, to more than triple total (fixed and mobile) telephone penetration - from 3.5 percent in 1999 to 11.5 percent in 2004⁵ - and to provide access to telecommunications to people in previously unconnected areas and villages. It should also be noted that subscriber statistics do not tell the entire story since the number of mobile users is higher than the number of subscribers. Informal sharing with family members and friends and community phone shops provide access to mobile services even to those who cannot afford to own their own phone. At the same time, mobile tariffs keep falling and handset manufacturers are eager to develop ever-cheaper handsets. The industry discussion on how low-cost so-called "Ultra-Low-Cost-Handsets" can be is far from over. One thing, however, is for sure: For operators and mobile handset manufacturers Africa has great potential: still, nine out of ten Africans do not have a phone.

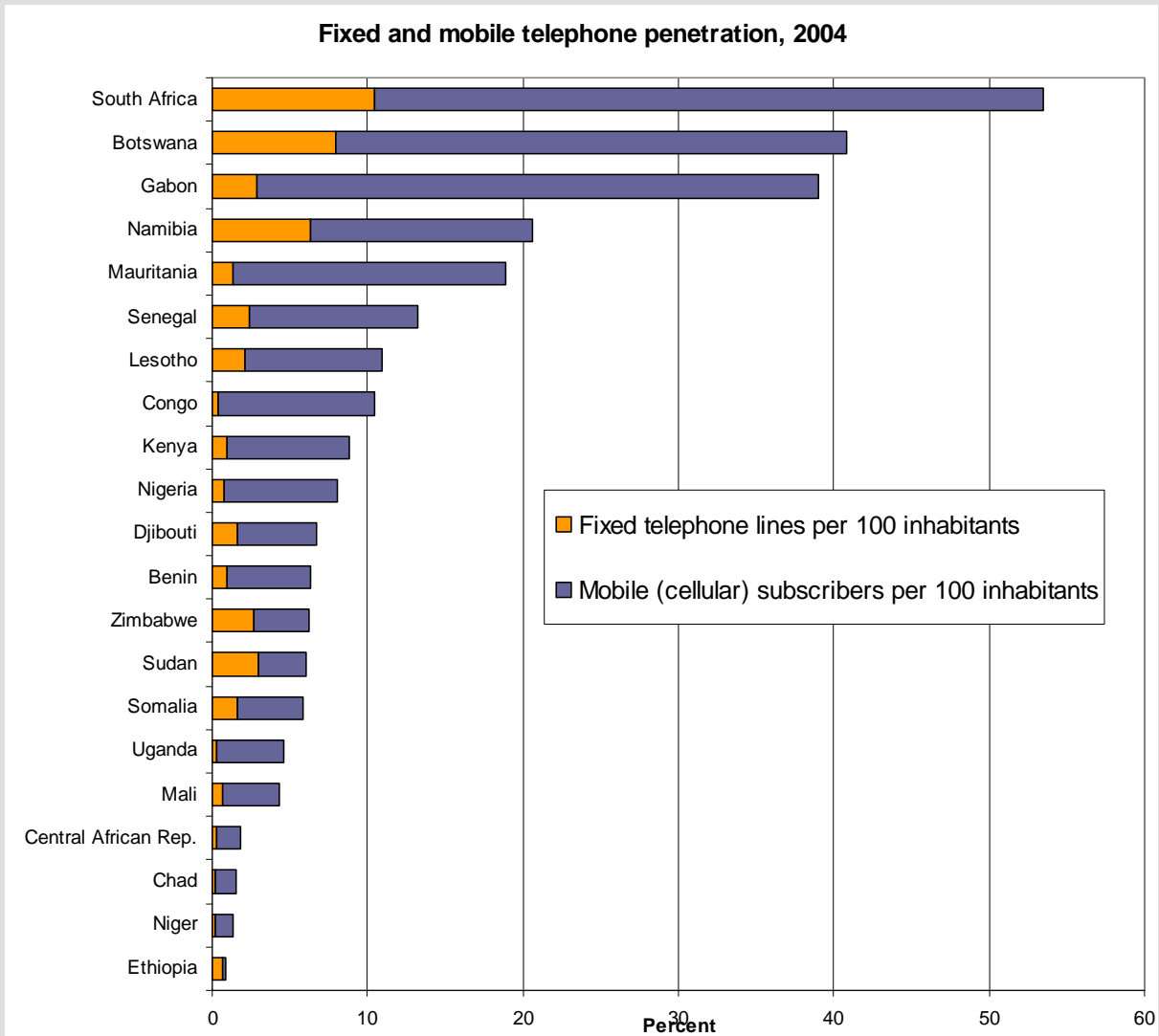
In 2004, the African continent added almost 15 million new mobile cellular subscribers to its subscriber base. Why not twice as many in 2005 and 2006?

⁴ Africa: The Impact of Mobile Phones. Moving the debate forward. The Vodafone Policy Paper Series, Number 3, March 2005. See: <http://www.vodafone.com/assets/files/en/GPP%20SIM%20paper.pdf>

⁵ In Sub-Saharan Africa, total telephone penetration also more than tripled from 2.6 in 1999, to 8.2 in 2004.

Figure 3.5: Fixed and mobile telephone penetration in comparison

Fixed telephone lines per 100 inhabitants and cellular subscribers per 100 inhabitants, selected Sub-Saharan countries, 2004



Source: ITU World Telecommunication Indicators Database.