The way forward for West Africa

Shared phones benefit individuals and communities

Replicating the success of Village Phone

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SHARING PHONES Terms one way for citizens at the base of the economic pyramid to gain the benefits of mobility. Phone sharing lowers the cash barrier – the money that must be paid upfront to get and stay connected. Our lead story separates shared mobile phones into four categories to help you understand the phenomenon, and describes how phone sharing is helping individuals, businesses and communities.

Another article in this issue takes a closer look at one kind of phone sharing, Village Phone in Africa. The project, which originally started in Bangladesh, has been replicated with great success in Rwanda and Uganda. Microfinance institutions provide loans to local citizens to set up Village Phone businesses that provide mobile communications services in their villages, which are located in largely rural, lower-income areas. We also visit Rwanda and Uganda to interview telecom communications operators about how they view the challenges and overall situations of their mobile communications markets. They talk about providing access to mobile communications for people who live in rural areas, and about surpassing license obligations.

The chairman of the regulatory authority of the Democratic Republic of the Congo (DRC) discusses the digital divide, and we also talk to local citizens in the DRC whose business and private lives have improved since they gained access to mobile communications.

Enjoy reading about these and other important topics in this issue of New Horizons!

Powering up

According to a 2005 UN report, 1.6 billion people live without electricity. For example, nearly 80 percent of sub-Saharan Africans have no electricity access. This poses challenges when trying to bring them the benefits of mobility. At the most basic level, the question is how to recharge their mobile phones.

In many rural locations, car batteries are the default power supply, and entrepreneurs use them to open phone recharging businesses. People may come from miles around to get their phones charged at one of these “charging stations.” The car batteries, in turn, are taken even longer distances to be charged, to a location with a generator (often diesel) or mains power. Solar power is viable in many places, but requires a somewhat larger initial investment. Ingenious has also created a range of human-powered generators, from bicycle hookups to hand and foot-powered chargers. The latter includes everything from hand-cranked models to a variation that the user squeezes in one hand.

Leapfrog into the future

Mobile penetration in Africa does not yet match that of other continents, yet Africa is the fastest-growing region in the world for mobile phone users. Mobile penetration already far exceeds fixed-line in numerous areas of Africa. Mobile networks are in many ways easier to expand than fixed-line, which requires the expensive work of laying out thousands of kilometers of cable.

Predictions are already appearing that mobile devices will bring Internet access to more Africans with a similar leapfrog over conventional computers, which only a tiny percentage of citizens there can afford. Operators in some African locations are rolling out 3G services and other solutions that will help them deliver more data flexibly and efficiently.

The DRC recently reported that 61 percent of its international WAP (wireless application protocol) users come from Nigeria and 19 percent from South Africa. WAP allows mobile phone users to access basic information through their handsets. Many people’s first phone is a mobile instead of a fixed-line, and the coming years may show that many get their first look at the Internet on a mobile device, too. Source: BBC and Mobile Africa
The Pakistan Telecommunication Authority (PTA) has introduced a system that blocks stolen mobile phones. If a consumer’s handset is taken, he or she can report the theft and the phone’s international equipment identity number (IMEI), and the device will be blocked from the network. The PTA is cooperating with operators, as well as federal and provincial police departments, and notes that the procedure for reporting a theft has deliberately been kept simple. An awareness campaign is educating consumers about the new system, which forms part of the PTA’s efforts to assist the present telecommunications sector boom in every way possible.

Mr. Modeste Hutumbo Kyamakosa, chairman of the Autorité de Régulation de la Poste et des Télécommunications du Congo (ARPTC, Post and Telecommunications Regulation Authority of the Democratic Republic of the Congo) discusses the digital divide.

Quick growth stats

In the Americas, GSM now represents a majority of the mobile communications market. Its market share grew to 51 percent by mid-2006, an increase of 1.1 percentage points since the same time the previous year. In Latin America and the Caribbean, the GSM market share was 63 percent.

Source: 3G Americas

The global number of mobile phone subscribers surpassed the 2.5 billion mark in September, just one year after reaching two billion. The top ten countries (China, India, Russia, USA, Pakistan, Ukraine, Brazil, Indonesia, Nigeria and Bangladesh), nine of which are new growth markets, accounted for more than half of the 484 million new subscriptions since the previous September. China and India alone take credit for 25 percent of the total.

Source: Ovum

3G subscriptions will number 285 million by the end of 2006, forecasts ABI Research. Tanzania and Zimbabwe are among the most recent countries to announce that operators are planning to launch 3G services in the near future.

Source: ABI Research and Mobile Africa

African mobile subscriber numbers will climb by 80 million to reach 220 million by the end of 2007, predicts Informa Telecom and Media. By 2007, Nigeria’s teledensity will be 20 percent, and the country will be home to 65 percent of the West African region’s projected 48 million subscribers.

Source: ITWorld International

In brief: DRC situation

The Democratic Republic of the Congo (DRC) is a vast country (2,345,409 square kilometers) with a very low population density (25 inhabitants per square kilometer). This means that the population is widely dispersed, creating a lack of communication between communities. “IET cannot be ignored, and lack of access to ICT is one of the poverty indicators,” comments Modeste Hutumbo Kyamakosa. “IET needs to be developed in order to reduce poverty - this can be applied to sectors such as education, health, business and interpersonal relationships.” Standard voice services can be expanded via mobile phone networks for an over-growing clientele: “This population is not well informed about the possibility of extending the standard services of voice telecommunications. People need to be educated to envision them toward the diversity of services, they also need to be made aware of the profits that can be gained.”
Phone sharing creates grassroots connections

Shared mobile phones are helping expand the reach of mobile communications in new growth markets while benefiting individuals, communities and businesses.

In order to reach the third billion mobile phone subscribers, affordability must be ensured for consumers near the base of the economic pyramid, those with a monthly income of 50 to 100 US dollars. In practice, this means bringing the total cost of ownership down below five US dollars a month, as well as lowering the cash barrier, which refers to the money that must be paid up front to get and stay connected. For consumers with an even lower income, located at the very base of the pyramid, phone sharing represents one possible solution for overcoming the cash barrier.

Given the chance, most people would like to own a mobile phone. The benefits of personal communication are well documented and accepted. However, financial reasons can prevent the lowest-income consumers from becoming connected. Phone sharing can be defined as a way for consumers to gain the benefits of mobility without purchasing a personal phone or committing to a network service. Shared phones can significantly lower the cash barrier that forms the threshold between very-low-income citizens and the benefits of mobility. Shared phones take various forms, from unofficial sharing between friends, roommates or family members to small businesses that allow consumers to make calls or send SMS messages for a fee. Nokia categorizes different types of phone sharing according to the Nokia Phone Sharing Framework, a concept in which each shared phone is labeled either private or business, as well as either rural or urban. Examples of phone sharing can be conveniently placed within the resulting four-square matrix.

**Family phones**

“Private” refers to a personally owned phone – a family phone in an urban setting is one example. Urban dwellers typically share their own phones mainly with family members, if anyone. Because of where they live, city people anywhere in the world tend to consider loaning a phone to a stranger to be a situation that may encourage theft. Statistically speaking, urbanites are also more likely than their rural counterparts to own their own phones, and therefore there is less need for phone sharing in urban areas.

**Home phones**

Shared private phones in a rural environment are designated as home phones in the Nokia Phone Sharing Framework. The difference between a family phone and a home phone becomes obvious when visiting rural areas in certain new growth markets where fixed-line coverage is not available. In this case, the shared mobile phone effectively acts as a home phone, as opposed to a personal one.

Rural villagers in Uganda, for example, may have a mobile phone or belong to a household or group that has one – a family, a circle of friends or another constellation such as people living in the same dormitory while they work in a mine or go to school. But family, neighbors and friends all feel free to use that phone. While city people tend to keep their phone numbers confidential, people in the countryside may provide the number of an acquaintance or a friend of a friend as their own contact number – sometimes without informing the person carrying the phone.

**Village phones**

On the business side of the framework, rural areas may have microlensed local businesses such as Village Phone kiosks. Turnover consists not only of calls and SMS messages, but also of sending and receiving money, which is accomplished through over-the-air balance transfers if the local operator has a solution such as Nokia Connect eRefill, or alternatively by sending an SMS with the “currency” – the number from an operator’s prepaid scratch-off card. The businessperson on the receiving end takes the number and pays out cash.

Village Phone also serves as a rallying point for community spirit for the whole village, with everyone participating in raising the antenna pole, for example. Since so much communication happens at the Village Phone location, it can also become a village meeting point where people gather.

Young people, of course, make use of Village Phone kiosks to phone their girlfriends or boyfriends in nearby towns or play mobile games. Another social use in Africa for shared phones, whether private or business, is the popular radio call-in shows. People consider it worth the price of a call to get a message delivered to relatives and friends all at once, or simply to gain the entertainment value of hearing their names or their favorite songs on the radio.

**Phone booths**

In urban settings, shared mobile phones form the basis for business in the form of kiosks similar to those in rural areas. Although urban shared phone owners offer the same services and utilize the same advantages of mobility as their rural counterparts – including network coverage, competitive operator prices and easy handset portability – the situation is different.

For someone new to this system, it can seem chaotic, but at a local level it works. Sharing phones forms another natural part of everyday life in places where traditions encourage people to trust each other and share resources to help each other in life. “Step messaging” is the term used to denote the process of calling somebody through the person who has the phone at the moment. The steps include the first call, the message delivered after that call (sometimes via a chain of people) and then another call when the desired person is actually present. This process fills important communications needs for information about health and other social matters.

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The trust seen among rural people sharing phones is not equaled in the city. Customers never get to hold a mobile handset, since it is considered too valuable to risk a possible theft. Instead they talk through a phone receiver that is connected by a cord to mobile communications equipment inside the kiosk.

Ingenious solutions allow payphones to cover every niche of the city target market. Kiosks can be constructed to be very portable or even take the form of bicycles with phones mounted on them. Such phone booths can follow the urban flow of people wherever they need to make calls.

New possibilities

Being connected to the rest of the world via shared phones brings the social and economic benefits of mobility to remote rural areas, and the remotest the region, the bigger the difference it makes. While phone sharing carries a higher potential benefit in rural regions, it also has its place in urban areas. But what do shared phones mean to the different industry players, many of whom have cooperated in projects such as Village Phone?

Policy-makers express enthusiasm in response to mobile phones. Instead of inserting coins, you use a simple command on your mobile number. It has helped to increase my business volume by 30 percent. Kato, a 35-year-old moneychanger in the heart of Kinshasa: “A client can call to tell me we need such and such amount of currency in US dollars or CFA francs, so we can put that aside in advance. We don’t have to waste time traveling anymore.”

Other mobile-based commerce transactions are on the rise. According to a recent Washington Post article, some 25,000 people in the DRC have subscribed to Celoya, a company that offers internet-based banking via mobile phones. Payment for a wide range of goods and services is accepted using a mobile phone for their livelihoods.

One example is Bin, a photographer. “I have clients who have receptions and celebrations. Now they call me on my mobile number. It has helped to increase my business volume and my income.”

And there is Kato, a 35-year-old moneychanger in the heart of Kinshasa: “A client can call to tell me we need such and such amount of currency in US dollars or CFA francs, so we can put that aside in advance. We don’t have to waste time traveling anymore.”

Embracing the advantages of mobility

By adopting mobility in combination with liberalization, the Democratic Republic of the Congo has seen triple-digit growth in mobile communications. Lower-income citizens are some of the people whose lives have been made easier and more prosperous.

Addressing decades of non-investment in telecommunications that kept the nation at a fixed-line density of less than 1 percent, the Democratic Republic of the Congo (DRC) radically changed course by making strong moves toward liberalizing its mobile telecommunication market. In the year 2000, eight mobile operators had been licensed, providing a competitive environment that has since seen tariffs per minute fall from several US dollars to as low as 0.05 US dollars.

While mobile subscriber growth has been increasing by 40 percent annually, the total number of subscribers in the country has only recently passed the three million mark. Mobility is bringing a host of benefits to this nation of nearly 60 million, from invigorating businesses to offering a higher degree of personal safety.

Life and livelihood

Mobile communications have become much more affordable in the DRC in the past three years. That, coupled with the ease of purchasing and transferring minutes to subscribers via SMS, has encouraged citizens of all income levels to use mobile devices in their personal lives as well as a tool of commerce.

For example, farmers are able to check prices for their commodities at nearby markets, avoiding unnecessary traveling and uncompetitive prices. By the same token, people can phone ahead before visiting relatives or friends to make sure they will be there - and in between visits, mobile phones help them keep in touch.

In Kinshasa, the nation’s capital, a range of smaller merchants and business people now depend on their mobile phones for their livelihoods.

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Innovations for shared phone users

One of the latest inventions in the shared phone domain is actually decades old. The old phone booths provided a shared terminal for the use of the community, and also complete control over costs for each call. Nokia Cost Control brings the same user experience to mobile phones. Instead of inserting coins, you use a simple command on the mobile to define the cost of the call before connecting the call.

Dialing 1234567#1*5, for example, connects the caller with number 1234567 for a duration equivalent of 1.5 monetary units. After the money runs out, the call is cut off. This greatly reduces the fear of overspending that is very prevalent in the lowest-income segment. Further, the caller can use the calling time they invested in to its full extent, compared to normal charging by the minute.

Shared phone businesses are easy to find in urban areas, but the big problem can be the lack of trust - the seller not trusting the caller to pay. On the other hand, the callers have doubts about the accuracy of the payments they are asked to make. Nokia Cost Control makes the process completely transparent so that correct costs can be charged based on correct tariffs, before the call.

These mobile phone booths in Kampala, the Ugandan capital, can go wherever the customers are.
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Village Phone has been implemented on a co-operative basis by the Grameen Foundation, a global non-profit organisation, and Nokia together with MTN Uganda and MTN Rwanda. The project, which originally began in Bangladesh by Grameen Telecom, has now been replicated in both African countries and uses microfinance as an innovative tool to create entrepreneurship. Another aim is to boost network connections in the areas where it is otherwise restrained by infrastructural limitations.

A microfinance loan of about 200 US dollars, repayable within approximately six months at a maximum interest rate of 4 percent, allows individuals to set themselves up as Village Phone operators, providing mobile communications services to their communities. The initial loan covers equipment in the start-up package, including an affordable Nokia handset, an external antenna set, a battery charger, a SIM card, prepaid airtime and marketing materials.

Making a difference

"Effectively, the loan takes the form of phones and other equipment," says MTN Uganda Village Phone manager Richard Rwamwami. "That makes the business much more sustainable. We make it known that there are certain access points from which villagers can communicate. Penetration is still just 6 percent, so a huge market remains. If you have the right product, microfinance is the most appropriate way to reach poor people. "Village Phone has really given us the chance to have an impact on people’s lives, especially those of women, who account for 65 percent of our Village Phone operators." These operators already total 5,300 in Uganda, and the number is growing every day.

Microfinance helps

Microfinance is an important tool to help the poorest of the poor lift themselves out of poverty," says Tim Wood of the Grameen Foundation’s Technology Center. "Left behind by the traditional financial service industry, poor individuals in developing countries can use microfinance to access capital at reasonable rates. With these funds, they can build businesses that help provide for their entire families."

By nature, microfinance institutions are rooted in and have a complete understanding of their local communities. "These deep links into the community are essential for introducing new services," Wood explains, "and the potential contribution of microfinance institutions to new business initiatives targeting rural communities is often underestimated."

Community benefits

In Rwanda, where Village Phone was launched in June 2006, the aim is to create over 3,000 new businesses throughout the country in three years in partnership with three Rwandan microfinance institutions: Urwego, Vision Finance and CARE. The launch, held in the village of Gashora, attracted more than 500 villagers as well as local, national and international guests to an enthusiastic festival including traditional dance and music - and actors demonstrating the versatility of the Village Phone.

The experience of the Ugandan Village Phone operators provides ample proof of how Village Phone is benefitting villagers in financial terms, and how these benefits permeate and multiply through the community.

Angilina Wandera in the village of Bumulumba has taken advantage of loans arranged through the FOCAS microfinance organization, one of eight involved in the Village Phone initiative. She operates her Village Phone service through the community. "With proceeds from the business, the Village Phone operator contributes to loan repayment and also purchases additional prepay airtime cards," says Wood. "The microfinance institution earns money from the loan and also a percentage of the revenue from airtime sales. The mobile communications provider earns money through volume sales of airtime, and the telecoms operator earns additional income from previously inaccessible markets. The model works because it is designed so that all parties in the partnership win."
We have proved that there is a niche for the Village Phone product in rural areas and, as such, plan to roll out even more villages. We have some 5,400 Village Phone installations country-wide and see the potential for more than 15,000. We believe that MTN Uganda has been the catalyst in driving this telecommunications sector. At that time, penetration was a mere 0.23 percent, says Noel Meier. “I believe that MTN Uganda has been the catalyst in driving this tele-density from the low levels which existed then to the 8.5 percent it is today.” He points out that Uganda is not the only country in Africa to benefit from the successful MTN recipe.

“Our customer base is approaching the 3.5 million mark, of which 99 percent is prepaid, and we currently enjoy a 65 percent market share. Strength and trust of the brand are essential ingredients and affordability is key. People in this market take into consideration factors such as billing increments, off-peak periods and cheaper, alternative forms of communications (SMS, SMS to email and email to SMS).”

“However, an enormous challenge in Uganda is the frequent power outages. Options for new and alternative energy supplies are required, but need to be cost-effective.”

In brief: MTN Rwanda
cell

Village Phone is ideal for lower-income citizens in rural areas and serves as a new technology for us, and since the demand for telecommunications services in Rwanda is still very important to us today. In our opinion, we have been the main way of growing the customer base, which is now close to 100 percent. The company is not just providing state-of-the-art telecommunications services in urban areas, but also helping create a base for rural areas to develop. The Village Phone project not only provides telecommunications services to rural areas, but also offers opportunities for local entrepreneurs to develop their skills, since the local service is provided by a local businessman.

Meier: We have proved that there is a niche for the Village Phone product in rural areas and, as such, plan to roll out approximately 300 Village Phones per month. We currently have some 5,400 Village Phone installations country-wide and see the potential for more than 15,000. We believe that every parish in Uganda can accommodate at least five Village Phones – each parish has a population of at least 5,000.
**Unified policies advance development**

West Africa is predicted to overtake Southern Africa in mobile subscribers by 2008 if strong growth continues. Cooperation between the countries in the region forms a prerequisite for continued development.

**Increasing potential with training**

Operators who want to boost network performance, reduce operating costs and improve profitability need to invest in good training.

For operators today, building an effective service means not only offering top-notch technologies, but also having skilled people around who can make sure subscribers get the best possible user experience. Continuous local training is important in all markets, but it is particularly necessary in fast-growing markets and in those with great potential for growth. One such market is Russia. When VimpelCom first launched its cellular network in June 1994, it had one switch and ten base stations. In April 2006, it was operating over 100 switches and about 20,000 base stations, serving more than 45 million subscribers. That’s just one example in a rapidly expanding market.

VimpelCom has benefited from training services for several years. It has utilized Nokia-run courses for local training in Russia, which has helped it reduce costs by sending fewer people to training events abroad. There are multiple courses and levels to choose from, so training can be matched to employees’ needs. Courses aim to lower operators’ costs and improve their service offerings. For example, VimpelCom engineers have received network operations and maintenance training to allow them to improve their skills and achieve greater efficiency.

Making training more local Ideally, a training center should be as local as possible. Apart from reducing travel costs, local training also improves operator investments, because the local language can be used, and because the trainers better understand the local business situation.

Training centers contribute to the way operators optimize spending and focus on winning and retaining customers. In addition to acting as knowledge centers for customers, employers and partners, the training centers also accommodate systems and technology connected with state-of-the-art technology. Operators can manage and assess their training programs based on the program organizers’ regular feedback, which provides an excellent measure of courses’ effectiveness. Companies that have used training agree that good training helps network performance. And last but not least, well-trained personnel are also noticeably better motivated.

**This is a condensed version of an article by Enyi Moses-Nwagwu that originally appeared in ITWorld International in June 2006.**

**Nokia Training Centers**

- Americas: Brazil, Mexico and USA
- Asia: China, Thailand, India, Indonesia and Australia
- Europe: Finland, France, Germany, Italy, Russia and UK

Additional training facilities in Hong Kong, Hungary, Japan, Poland, Singapore and Taiwan

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**West African market: a street scene in Nia­mey, capital of Niger.**

**continuing sustainability**

In the past decade, the number of GSM networks in the 15 member countries of the Economic Community of West African States (ECOWAS) has grown from five to 42. This very strong growth pattern has been primarily driven by pent-up demand, as well as the climate created by the governments and the speed of players in solving financing challenges.

If the mobile communications sector wishes to continue as a critical development driver in West Africa, it must keep certain things in mind. Poverty is a key issue, with more than 70 percent of the region’s population earning less than one US dollar per day. This constrains not only the size of the addressable market as it currently defined, but also the sustainability of growth rates in the future.

**Connectivity is key**

Roaming policies present other challenges: lack of cooperation between operators in some regions, billing problems, lack of interoperability between systems and congestion and high prices in African gateways. It can currently cost more to call between two ECOWAS countries than to call Europe or USA. Cross-border and overall telecom connectivity represents the key to West African economic and social development and integration.

Competition between operators should be encouraged, and regulators can make the prospect of rural expansion more attractive to one operator. Some analysts predict that Africa will produce the most innovative uses of mobile technology, simply because its citizens and countries cannot afford to do otherwise. **This is a condensed version of an article by Enyi Moses-Nwagwu that originally appeared in ITWorld International in June 2006.**

Skilled employees are just as vital as top technology to an operator’s business. Testing, as well as collaboration on trials with local application providers. Links with local talent

The training centers also facilitate links with local universities and other talent sources. The centers naturally keep up with the very newest technology, and by doing so they help introduce future technologies to new growth markets. As mobile technologies expand into new areas, they inspire and fuel an increase in local know-how and competence connected with state-of-the-art technology. Operators can manage and assess their training programs based on the program organizers’ regular feedback, which provides an excellent measure of courses’ effectiveness. Companies that have used training agree that good training helps network performance. And last but not least, well-trained personnel are also noticeably better motivated.
Inside this issue

New Horizons provides insights into Africa, the fastest-growing mobile communications market in the world. We examine the role of shared phones in lowering the threshold for benefiting from mobility. We also discuss rural connectivity and its challenges with experts in Uganda, Rwanda and the Democratic Republic of the Congo.

Take a look at how the future of West Africa is unfolding – it is set to overtake Southern Africa’s subscriber numbers within a few years. Also, find out how operators can increase network performance and improve profitability by investing in employee training. All this and much more inside New Horizons magazine!