

*Bringing the Internet to Africa: Africa Online and the e-touch initiative*

*Community information centres: The Nakaseke telecentre*

*Mobile phones in rural Africa: Plenty to talk about*

# **Computers and telecommunications**

They are the newest stars on the communication scene. Computers have changed how information is obtained, produced, managed and distributed. No longer do scriptwriters and editors have to labour over handwritten manuscripts, no longer do secretaries and typesetters have to type and retype page after page of text. The switch from the old technologies is not yet complete in the developing world, but it is happening.

The wedding of computers and telephones has produced e-mail and the Internet. These are revolutionizing communications and information access in the developing world. How far and how fast they will spread into remote rural areas remains unknown. But it is clear that they will have as yet unforeseen impacts on development.

A technology that is spreading even faster than the Internet (if that is possible) is mobile phones. These are ideal for rural areas: cheap to set up, easy to use, filling a vital need. Perhaps we are not that far away from the time when the shopkeeper, the farmer, the rural taxi driver, all have their mobile dangling from their belt.

# Computers and telecommunications

## Bringing the Internet to Africa: Africa Online and the e-touch initiative



Paul Mundy

### Lagging behind

Africa has been lagging behind in the global Internet stakes. Only one out of every 9000 Africans outside South Africa has access to the Internet, compared to one in 38 in the rest of the world. According to Canada's International Development Research Centre (IDRC), the continent cannot afford to miss the information revolution and its implications for social and economic development.

Africa is woefully short of basic infrastructure. Electricity and telephones are rare in rural areas. Few people can afford computers, or know what they can do. In rural areas, educational levels are low and illiteracy is common. For the majority of people, computers and the Internet are still decades away.

But progress is being made. In 1996, only 19 countries had full Internet services. By 1999, it was 53: all of Africa except Congo, Eritrea and Somalia. Estimates vary, but by May 1999 there were 339 Internet service providers (ISPs) throughout the continent, with something like half a million user accounts (more than half of them in South Africa).

Several aid agencies have been important in establishing Internet services in Africa. They include the IDRC's Acacia programme, the USAID (United States Agency for International Development) Leland Initiative, France's IRD (Institut de recherche pour le développement), and NGOs such as VITA (Volunteers in Technical Assistance).

But donor money can only go so far. If it is to be sustainable, the information revolution in Africa has to pay for itself, and that means private businesses such as ISPs must see a commercial opportunity to invest in and to make a profit.

### Africa online

Africa Online has seen just such an opportunity. This Nairobi-based firm operates in Kenya, as well as in Côte d'Ivoire, Ghana, Swaziland, Tanzania, Uganda and Zimbabwe. In January 2000 it acquired Net-2000, another large Kenyan provider, and became the largest ISP in the continent outside South Africa, with 20,000 subscribers in Kenya alone and expansion plans involving at least another five countries.

Three Kenyan students at the Massachusetts Institute of Technology founded Africa Online in 1994 as an e-mail news service. At the time, other students thought they were crazy: computers and e-mail were things for nerds and geeks. Only a few saw how important these new media would become – and how quickly.

In Kenya, Africa Online offers Internet services in the big cities of Nairobi and Mombasa, of course. But it has also expanded to smaller centres such as Kisumu, Eldoret, Nakuru and Kitale. About 40 percent of the firm’s subscribers are outside Nairobi.



Subscribers are mainly businesses, because they can afford the charges: and indeed, many are finding that they cannot afford to be without Internet and e-mail services. “We need at least 300 subscribers in a place before it’s worth our while establishing a server there,” explains James Ochola, the firm’s marketing manager. And there has to be a reasonable phone service: Africa Online likes to have about one line for every 10 subscribers to ensure that users don’t have problems connecting.

### E-mail: A vital tool

E-mail has quickly become a vital tool for development organizations. A scan through a list of NGOs and government agencies shows that many now have e-mail addresses. They use e-mail to send messages to other agencies and to head office, request information, set up meetings, negotiate contracts, submit reports, and keep in touch with people within the country and abroad.

E-mail and Internet services are still expensive in Kenya: about €50 per month for a subscription, compared to €20 or less in some countries in Europe and North America. Add to that the charges for time online. “That’s too much,” says James Ochola. “If e-mail and the Internet are to become a mass medium, people must be able to afford it.”

Prices are high because of the high cost of phone calls: the State-run telecom monopoly provides abysmal services and keeps prices high. James Ochola estimates that Africa Online could halve its charges if phone services were priced more reasonably. That may come, though: Africa Online has allied itself with other ISPs to lobby for changes, and the government is ready to deregulate the telecom market.

### e-touch

Perhaps the most promising idea for rural areas is a service Africa Online calls “e-touch”. You don’t need your own computer or telephone: just walk into an “e-touch centre” and you can surf the Web or send and receive e-mails using your own e-mail address. Compared with the

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cost of a fax (or of buying your own computer and telephone), prices are reasonable: 60 shillings (less than €1) to send an e-mail, and only 10 shillings (about €0.15) to receive a message.

Surfing is more expensive: 10 shillings a minute. “If everyone is cruising the Net, it will tie up bandwidth,” James Ochola explains. That slows down surfing, and means that other people cannot log on. With fewer byte-hungry graphics, e-mail uses up less bandwidth, and allows more people to use the service. So Africa Online structures its prices to encourage e-mail rather than surfing.

A small business with just a computer and a phone line can sign a contract with Africa Online to set up one of these Internet cafes. There are now more than 200 of them, scattered all over Kenya, including in smaller towns such as Machakos, south-east of Nairobi. Many are in “communication shops,” which are common throughout Africa and provide phone, fax, photocopying and occasionally word-processing services. The owners split the profits with Africa Online, which provides the software and connections, and handles marketing.

After a successful launch in Ghana, Africa Online started its Kenya e-touch service in June 1999. Six months later, 30,000 people had registered as users. Three-quarters of them were what James Ochola calls “active users”, people who log on at least once a week. And their numbers were rising by 1000 people a week.



Signs like this one advertising an e-touch centre have been popping up all over Kenya  
(Photo: IIRR)

## Hard-nosed development

Africa Online isn't a donor, and it isn't a development agency. It's a hard-nosed business – one that seeks to make a profit. The Internet is critical for agriculture, says James Ochola. Kenya is an agricultural country, and farming problems are often really information problems. Better communication allows people to manage resources better. He thinks that Africa Online can play a key role in getting information to people in a form they can use.

Perhaps this is the future of the Internet in rural Africa. In small towns that have electricity and telephones, local entrepreneurs set up Internet cafes that provide vital communication services to local people. After all, North America and Europe – and tourist resorts all over the world – have gone through this phase. Why not rural Africa too?

### FOR MORE INFORMATION

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## Community information centres: The Nakaseke telecentre



Paul Mundy

### Come and read

How can outsiders help people in rural Africa gain access to information? One possibility is through “community information centres” like the one in Nakaseke, a small Ugandan town about 60 km from Kampala.

Established in 1998, the Nakaseke centre is a single-storey building containing a library, a meeting area, a photocopier and computers. The well-stocked library has 4000 books. There’s a children’s section with colourful storybooks as well as school textbooks. The adult section has fiction and non-fiction books and student texts.

Thirty or forty people a day may visit during the holidays, says Amina Nassolo, the librarian; on schooldays, as many as 60 children from the nearby school drop in during their free periods. Reading in the library itself is free, but if you want to take a book home, Amina Nassolo will charge you 2000 Ugandan shillings (about €1.30). That will allow you to borrow books for up to two weeks at a time, over a period of three months.

In an effort to reach children who cannot come into the library, Amina Nassolo is planning a “book-box” service. Teachers will be able to select books for their classes, and she will pack them into a box and send them to the school.

### Don’t mention computers

But it is the computers that attract many visitors’ attention. There are eight of them in all: two in the library, one in the manager’s office, and the rest in a training room. The centre provides typesetting services and offers courses in basic computer use, word-processing and spreadsheets, as well as e-mail and internet services. And its e-mail and Internet services are fully operational.

In their work with the community, the centre staff have learned not to emphasize the role of computers. “The word ‘computer’ is intimidating: it’s too much wisdom,” says Augustine Bazaale, the centre manager. Instead, the staff start with helping people identify specific problems: say, a business calculation, a farming question, or a homework assignment. They can then show how computers can help provide answers. They hope that this will trigger interest, so users will want to learn more.

## Serving the community

The centre is becoming an important information hub for local people. Farmers meet in the centre to discuss agricultural techniques and to question visiting scientists from the National Agricultural Research Organisation's Kawanda research station about problems in coffee and banana production. The centre works with agricultural extension workers to promote new technologies, and helps farmers to plan plots where they can demonstrate and test them.



Soccer games (here, an Africa Cup game) are popular evening viewing at the Nakaseke community centre  
(Photo: Paul Mundy)

Makarere University's Institute of Adult and Continuing Education is planning to use the centre to offer secondary school certificate courses, as well as training in English for beginners and in project planning and management. An indigenous knowledge resource centre is being established to collect and document local people's traditional wisdom. Activities such as farm shows, free computer courses for talented youngsters, study tours and a newsletter are planned. The community is actively involved in the centre management: sub-committees of residents handle activities for young people, women, farmers and traders, and deal with leadership and education issues.

## Experimental phase

The Nakaseke centre has attracted a large amount of outside support – from Uganda's Public Libraries Board as well as a brace of foreign donors, including the International Telecommunications Union, the British Council, Unesco and the Acacia programme run by IDRC.



People come to the Nakaseke community centre library to study, to borrow books or just to read the newspaper  
(Photo: Paul Mundy)

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## BOX 10

### Internet for development?

Open the newspaper, and news of the latest mega-merger leaps off the page: some upstart, 10-month-old company has taken over a venerable established giant. Turn on the television, and the news is as likely as not to feature yet another technological advance in information processing or digital communication. Walk along the road, and gaze at the Internet addresses that adorn billboards: very often they are the only text in the advertisement apart from the name and logo of the company.

We are bombarded with information about the Internet every day. It is hard to escape from reality: the Internet is changing our economy, our society, our lives.

This has not escaped the notice of the people who fund and run agricultural development efforts. New projects sprout up every day to introduce the Internet to remote villages, establish cybercafés in market centres, link buyers and sellers through electronic trading, make information available over the Internet, and what-have-you.

We are still in the infancy of the Internet, and while some of the many current attempts to use it for development may succeed, some will undoubtedly fail. It's worth taking a little time to list some of the problems.

- **Content:** The vast majority of Internet sites are irrelevant to local people. How does someone find the few sites that are useful – like technical information on agriculture, market prices or contact addresses? And most of the content is generated by Europeans and Americans, not by people from developing countries themselves.
- **Language:** Even if it is relevant, the content of most websites (and the menus in computer programmes) is in a language (English) that local people can understand with difficulty, if at all.
- **Location:** There aren't enough places (such as Internet cafés and community telecentres) where people can go and use computers. There are scarcely any in Africa's villages, most of which lack basics such as electricity and roads.
- **Critical mass:** Even if you have an e-mail account, whom do you call? As with telephones, there seems to be a critical mass above which it makes sense to have an e-mail account.
- **Connections:** Phone connections are too slow and unreliable – though that is changing as governments allow private investment in their national phone systems.



Right: This telecentre in Koudougou, Burkina Faso sells office supplies as well as computer and communication services  
(Photo: Jacques Sultan)

Above: More sophisticated telecentres in the towns offer photocopying, word-processing, fax, scanning and Internet services  
(Photo: Paul Mundy)



- **Cost:** Computers are expensive – far too expensive for the vast majority of individuals in developing countries. So are connection fees and online charges. It may be possible to get sponsors or donated equipment to set up a telecentre, but even then, supplies and maintenance are a problem. How do you get the computer fixed when it breaks down? Where can you buy ink cartridges for the printer? And there's the theft problem: since computers are expensive, they are tempting things to steal.
- **Skills:** Computers are still hard to use. You have to be able to type, use a mouse, navigate around a screen, understand obscure commands and error messages, and know what to do next. You have to know all the wonderful things that a computer can do, and then learn how to make it do what you want.
- **Management:** If you want to run a village telecentre, not only do you have to know scads of software, you must also be able to fix problems, and have the management and business skills to make your telecentre successful. People with those skills are few and far between, and they are unlikely to want to set up shop in a remote village: they probably already have a well-paying job with a computer firm in the capital city.

On the other had, the Internet and (especially) e-mail are a godsend for intermediary organizations, such as international NGOs and, increasingly, government institutions such as research institutes and universities.

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Plus, it may be that private, commercial Internet ventures (such as those in Senegal, see pp. 118–119) are likely to be more successful than those “imposed” by foreign projects, since they are forced to make a profit or go bust. Donor projects may have an important role in establishing the initial services and introducing the concepts and skills of electronic communication to the first providers and users. The private sector then takes over... which is surely as it should be, rather than donors or the public sector having to fund the service ad infinitum. Perhaps that’s where the (immediate) future lies?

Can the Internet be used to serve directly the poorest people in rural areas? Perhaps through community centres like the one in Nakaseke? The answer is still unclear: the technology is still new, and it is changing rapidly. What was impossible yesterday is possible today, and commonplace tomorrow. It is likely, however, that with the range of experiments now under way an answer will be found, one way or the other.

What happens when the donor funds dry up? Some of the money needed will come from the telecommunications and computer services that the centre provides: telephones, fax, e-mail, Internet and word-processing. Training courses and photocopying should also generate some income, and fees can be charged for hosting workshops for outside groups. There’s considerable potential demand for these services from the local government offices across the road, as well as from schools, a nearby teacher-training college, and the hospital.

Even so, it is clear that it will be impossible to sustain the centre’s many activities without continued government or donor funding. The local council is enthusiastic about the centre. Augustine Bazaale hopes that this will translate into financial support.

How about the centre’s impact on the surrounding area? It’s too early to say whether the Nakaseke centre will be able to achieve its goal of reducing poverty by empowering the local community. It is vital that it do so in order to continue to attract outside funding. But even if it proves a failure, the centre will still bear fruit in the form of valuable lessons for future efforts to provide rural Africans with the information they need.

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## Mobile phones in rural Africa: Plenty to talk about



Paul Mundy

Richard Seketa nurses his mobile phone as he settles down at the edge of the crowd watching the Togo vs Côte d'Ivoire soccer game on the open-air television. He knows that a ringing phone will not interrupt his evening's viewing: here at the community centre, the phone is out of range of the nearest transmitter.



Richard Seketa uses his mobile phone to call suppliers for his construction and agrochemicals business (Photo: Paul Mundy)

Despite the poor reception, the phone is increasingly important for Richard Seketa, who runs a building-materials and farm-supply shop in Nakaseke, a small town in central Uganda. He uses it to call up suppliers in Kampala to order supplies: cement, metal sheets for roofing, and agricultural chemicals. The suppliers put the goods on a truck to deliver them to his shop, saving him time and the cost of the 120-km round trip to Kampala. He also sometimes lends the phone out to friends and neighbours, making a bit of extra money by charging them for the call.

Richard Seketa is one of a fast-growing number of people across rural Africa who use mobile phones to run their businesses and keep in touch with their families. Cocoa and coffee farmers in Côte d'Ivoire club together to buy a mobile phone so they can check commodity prices in London. Repair shops in Uganda keep motorbikes – a vital form of transport in rural areas – on the road by calling wholesalers to order

spare parts. NGO staff use their mobiles to verify important facts and to coordinate their work. In Rwanda, mobiles account for 58 percent of all telephone subscribers (though there are still only 0.23 mobiles for every 100 inhabitants).

### Unwired connections

Telephones are one of those things that people in developed countries take for granted. Not so in the developing world: the phone service in many African countries is abysmal. The costs (especially for long-distance calls) are astronomical. Outside the big cities, telephones are few and far between. In 1998, there was only one phone for every 99 Kenyans; in Chad the figure was one for every 833 people. That compares with one phone for every 5.37 people in South Africa, and more than one for every person in Finland.

Poor telephone services are not just a minor inconvenience. Unable to reach clients, make deals or tap markets, businesses stagnate, the economy stutters.

In the absence of telephones, rural people have found ingenious ways to communicate. One widely used method is to give a small amount of money to the driver of a communal taxi or lorry, and ask him to drop a message or parcel off in town. Another is via the radio: for a small fee, radio stations will announce a death or illness, or broadcast a message for a particular person.

But things are changing – fast. Mobile phones now offer an alternative to fixed-line services. A mobile-phone operator does not have to erect thousands of telephone poles, dig holes in the ground and bury miles of cable, just to serve a few people in a remote area. It erects a transmitting mast, and presto! – anyone within a certain radius can make calls. That enables mobile-phone operators to establish services far more quickly than a fixed-line company, and to break even with far fewer customers. Many remote areas will probably never be served by fixed-line telephones. Mobile phones make it possible for the first time to serve them economically.

### Kenya 0, Uganda 1

Government policy is key to the development of mobile phones. Kenya offers an interesting contrast to Uganda. Number-engaged signals tootle out across Nairobi offices, and harassed secretaries repeatedly dial numbers in the hope of getting through. They are the lucky ones: at least they have a phone. Getting one in Kenya can mean years of waiting... unless you are prepared to pay the right people the right amount of bribe money.

The Kenyan government has been slow to deregulate the country's telephone monopoly. State-owned Telecom Kenya runs an expensive and overloaded mobile service, which has only 10,000 subscribers and operates only within a 30 km radius of the capital. Most callers have to rely on Telecom Kenya's awful fixed-line service. Kenyans gleefully relate how one government minister had to borrow his Ugandan counterpart's mobile phone so he could get through to the director of the national phone company. "A better phone service in Kenya would be like the Second Coming," says one frustrated caller.

Fly to Entebbe in Uganda, though, and passengers pull out their phones as they descend the aircraft steps to the tarmac. Drive along the road to Kampala, and you pass people with mobiles glued to their ears. Shops and kiosks sell phone-cards and rent out handsets. Huge billboards advertise the country's two mobile operators: Celtel ("Now you're talking") and MTN ("The better connection").



Billboards advertising mobile phones line the main roads in Uganda  
(Photo: Paul Mundy)

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## “Wow, this is a big market!”

MTN is a South Africa-based company that offers a range of telecommunications services, both fixed-line and mobile. Apart from its home country, it operates in Cameroon, Rwanda, Swaziland and Uganda, and is about to start up in Nigeria. “In 1997, we were looking for investment opportunities, and the markets in Europe and Asia were pretty crowded,” says Erik van Veen, marketing manager of MTN in Uganda. “Then we looked at Africa, and we said, ‘Wow, this is a big market!’ ”



The incumbent operators weren't doing a good job, he says: they were charging prices that people in Europe and South Africa wouldn't pay. “We believe that a customer is a customer, no matter where they are,” he says. “They want the same service at the same price.”

MTN started phone services in Uganda in early 1999. “We were laughed at by our investors. ‘Who can afford to take on mobile services?’ they asked,” remembers Erik van Veen. But demand was phenomenal: the firm sold 10,000 connections in Kampala in the first month. By January 2000, it had 70,000 subscribers and was the largest phone operator in Uganda.

MTN has established services in Kampala and in dozens of towns in Uganda. Demand has continued to be very strong. The firm has gone into a phase of “controlled growth”, selling only 2000 new connections a month. That's to avoid government concerns about the firm's market dominance, and to reassure Europeans who still regard Uganda as a high-risk place to invest.

## Want a beer, or want to talk?

Despite Uganda's recent rapid economic growth, it is still a poor country. How can Ugandans pay for the “luxury” of a mobile phone?

Erik van Veen explains that Uganda is a cash-based economy: unlike the developed world, where most of people's income at the beginning of the month is already tied up in things like rent and pension contributions, people here work with cash. “They can always get hold of some cash for the things they think are important,” he says.

And Ugandans are a phone-operator's dream: they love to talk to each other. Once they have a mobile phone, they use it as much as ten times more than people in developed countries do. Nile Breweries, the country's largest beer producer, has blamed a dip in beer sales on the increased spending on mobile phones.

MTN's system is based on prepaid scratchcards. Once you have bought a mobile phone and a SIM chip (which gives you an MTN phone number), you pay for your calls by buying a plastic card. You scratch away an opaque layer to reveal a code number, and you punch this

MTN's latest way to provide telecommunication services – a container with payphones. A counter inside the container sells phone cards and has computers for Internet services  
(Photo: Paul Mundy)



number into your phone, adding units to your account. You can use the phone until you've run out of units, and then you have to buy another scratchcard.

This system is good for phone customers, who pay only for the calls they actually make, rather than a monthly bill, which is often wrong. It's good for the phone operator, too, since it avoids the need for expensive-to-run subscriptions and billing systems, and eliminates the risk of customers not paying their bills.

### Phone trade

Telecommunications do not just fill a social need, and are not just useful in the cities. They are particularly important for entrepreneurs and traders in small, farm-based towns. Monica Namaganda runs Butembe Vetcare, a wholesale veterinary supply store in Jinja, a town next to Lake Victoria famous as the source of the River Nile. She uses her shop's new (fixed-line) phone to order supplies, and takes orders from retailers in the surrounding area.

Down the road, Aggrey Wettaka, a veterinarian at the Superchic store, has given his mobile phone number to his clients: poultry farmers around town. They call him for advice, or to ask him to come out and check on their flocks.



Monica Namaganda, at the Butembe Agrovet store in Jinja, ordering supplies from Kampala  
(Photo: Paul Mundy)

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Erik van Veen tells a story about Busia and Melaba, two towns on Uganda's border with Kenya. MTN had established a base station to provide services to Busia. But a gap in the hills enabled people in some parts of nearby Melaba to get a weak phone signal. He said that Melaba phone-owners would sit on the top of a hill, where the feeble signal was strongest, and sell phone services to customers. When MTN opened a base station in Melaba, the firm sold 300 connections in the first day. Many people just across the border in Kenya have also bought a phone so they can take advantage of the Ugandan station's signal.

## Broad customer base

MTN's subscribers are "very broad-based", says Erik van Veen: they range "from government ministers down to traders, people in formal and informal employment, grandfathers and students". Most calls are made for trade and business, especially in the huge informal sector. About 70 percent of phone owners are men, though many younger women, especially students, now also sport a phone.

In countries such as South Africa and Swaziland, people who could not afford a phone as individuals band together in groups to buy one. That doesn't happen in Uganda, says Erik van Veen. He thinks this is because Uganda's recent history of war has reduced the level of trust people have in each other.

Some people earn money by lending their phones to others and charging them for the calls made. But this is declining in Uganda because it is easy to buy a second-hand phone.

Phones are still too expensive for small-scale subsistence farmers to own. But increasingly, such farmers can borrow a phone to make important calls. And on a larger scale, phones make the economy more efficient: it's easier to find a market for farm produce; there are fewer misunderstandings and delays in the marketing chain; inputs such as seeds and fertilizer are available at the right time and place. All in all, there should be a substantial trickle-down effect that benefits even the poorest people.

## Making a difference

There's clearly enormous scope for expanding services in Uganda and elsewhere. Gulu, the largest town in the north of the country, "probably has about 20 fixed-line phones", says Erik van Veen. Kisoro, at Uganda's south-eastern tip and next to politically volatile (but telephonically highly successful) Rwanda, has just one fixed line "which sometimes works".

Good communications can make a huge difference to the lives of people in rural Africa. And it looks like mobile telephones are about to make that difference.

**BOX 11****Telecentres in Senegal**

The multicoloured sign above the door reads “Télécentre Mame Diana Boussa”. Brush aside the cloth hanging over the doorway, and peer into the gloom. Mame Diana’s son waves you towards the single phone booth in the corner of the room. You make your call, and pay the boy 300 CFA francs for the call.

In Europe, phone booths are a familiar sight along the streets and in shopping centres. Here in Senegal, there are many booths, but there are plenty of people like Mame Diana who provide the same service.

The village of Niaga is not far from Dakar. It’s perhaps an hour’s journey – a fare of 300 CFA francs (€0.46) – in one of the communal taxis that wait for passengers in the centre of the village. Before the phones arrived, villagers who wanted to send a message to the city would either give a letter (and a tip) to the driver of one of the taxis, or they would go themselves – 800 CFA francs (€1.22) for the round trip. Now all they do is head for Mame Diana’s.



Thousands of telecentres like this one in the village of Niaga, Senegal help rural people keep in touch  
(Photo: Paul Mundy)

Telecentres – thousands of them – have sprouted up all over Senegal. Most, like Mame Diana’s, are just a telephone in the owner’s house. Others also offer fax, photocopying and typing. The more sophisticated also

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provide word processing, scanning, e-mail and Internet access. Many telecentres are side-ventures for businesses such as stationers and agricultural supply stores, in much the same way as pubs and service stations in Europe have payphones for their customers' use.

More and more telecentres are providing Internet and e-mail services. That is especially true in northern Senegal, a poor area with heavy emigration. Local people use e-mail to keep in touch with their relatives in France or the United States: it's a lot cheaper than a phone call or fax.

Senegal's private telecentres are a result of the national telephone company, Sonatel's, decision to promote rural telephony. Each would-be telecentre operator signs a contract with Sonatel and pays an initial deposit. Sonatel installs phones and meters, and bills the operator each month for the number of calls made.

Private telecentres are attractive to Sonatel for various reasons. They avoid the vandalism and maintenance problems associated with phone booths. They do not require a Sonatel employee to empty coin boxes or sell phone-cards. They are cheaper to install than phone booths. Callers like them: they are more comfortable than standing in a hot, stuffy, glass-walled phone box.

Sonatel first tested the idea in 1992, when it established the first four telecentres. Since then, the number has risen rapidly. There are now over 4500: about two-thirds in Dakar, and the remainder scattered all over Senegal. The telecentres create employment (at least two people are needed to run a telecentre from morning until evening). And they are profitable: in 1994, they accounted for 5.5 percent of Sonatel's turnover, even though they represented only 2.5 percent of the lines installed.

## **For more information**

Observatoire Économique des Télécommunications d'Afrique, [www.telecom-plus.sn/observatoire/Obtcp.htm](http://www.telecom-plus.sn/observatoire/Obtcp.htm)

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