



Development Fund

Case Study

Community Phones and Internet, Millennium Village – Mayange, Rwanda



KEY FACTS

Rwanda

Population: 9.5 million

GDP (per capita): US\$250

Mobile penetration: 9.2%

Internet penetration: 1.5%

Broadband penetration: <1%

Mayange Village

Population: 25,000 (49% <18 years old , 7% >60 years old)

Average income per household per day : US\$0.66

School teacher income: US\$40/month

Primary school attendance: 35%

Secondary school attendance: 10% (US\$200/year)

Infant mortality: 23% under age 5

“The integration of Information and Communications Technology (ICT) plays a critical role in ending the cycle of poverty, helping people share information and giving them the tools to improve their own social and economic situations.” **Jan Embro**, President, Ericsson in sub-Saharan Africa

Background: Millennium Villages

The Millennium Villages is a bold, innovative project driven by communities and supported by Millennium Promise, The Earth Institute at Columbia University and the UN Development Programme. The initiative seeks to help fight extreme poverty, hunger and disease by working with the poorest communities throughout Africa. The Millennium Villages project is partnering with local and national governments, the public and private sector and other stakeholders to provide affordable and science-based solutions to help people lift themselves out of the extreme poverty that traps approximately 1.4 billion people today.

Mayange Village in Rwanda

Mayange, Rwanda is one of 12 Millennium Village sites across Africa. The village comprises about 25,000 people and is located 40km south of the capital, Kigali. The area represents one of the poorest regions of the country, suffering from sporadic rainfall and declining soil fertility, leading to endemic poverty, illness, and a lack of economic opportunity. The village also lacks access to affordable communications, which is vital to connect and access educational, agricultural, health and government information that could greatly improve the living standards of the community.

"MTN Rwanda is pleased to support the Millennium Villages project in Mayange and successfully expand our public access telephones and Internet programmes to the rural population of Rwanda." **Themba Khumalo**, CEO, MTN Rwanda

The Challenge: Connecting the Unconnected

Access to Information and Communications Technology (ICT) plays a critical role in ending the cycle of poverty. Mobile communications in particular has been proven to have significant social and economic impact on developing countries. A recent study by Deloitte concluded that a 10% increase in mobile penetration leads to a 1.2% increase in the annual growth rate in national GDP.

Mobile technology is useful in expediting information sharing and creating pockets of entrepreneurial enterprise among poor, rural communities. At the same time, it enhances and boosts existing systems in education, healthcare and business.

In order to encourage social and economic development in Mayange, Ericsson, MTN Rwanda and the Millennium Villages project partnered to improve the GSM connectivity of the village. Once connectivity was established, a pilot to demonstrate the sustainability of Community Phones and Community Internet was launched with the GSMA Development Fund. This pilot demonstrates tangible development outcomes for the community while also providing insight into the regional market for connectivity and related services.



The Solution: Community Phones and Internet

The project focused on creating small business entrepreneurs through the delivery of Community Phones and Internet. Community Phones involves providing shared GSM telecommunication devices that are managed by local entrepreneurs who charge a fee for the service. Community Internet uses enhanced GSM networks to bring Internet access to computers in fixed booths, also run by local entrepreneurs.

By enabling entrepreneurs to offer GSM mobile phones and Internet services to the 25,000 people of Mayange, new local, sustainable GSM-based businesses were created, providing a platform for economic growth that can greatly help to reduce poverty.

In order to deliver Community Phones and Internet to Mayange, Ericsson together with MTN upgraded the network to EDGE (Enhanced Data for GSM Evolution) to enable the transfer of data. Sony laptops were also provided for data connectivity. The GSMA Development Fund provided project expertise and project management and worked closely with the Millennium Villages personnel.

For the purpose of this pilot the phones and Internet equipment were provided to a community Co-operative that was set up for the project. The Millennium Villages Business Development Committee selected members of Mayange Village to become entrepreneurs and pay the Co-operative a rental fee to use the equipment as a business, which in turn allows the Co-operative to sustain and grow the business by replacing and purchasing new equipment.

The pilot launched in June 2008 with 25 Community Phone entrepreneurs and 2 Community Internet entrepreneurs.

"As well as the Internet, the most popular services that I sell are a five week computer course in MS Word and Excel and the typing of paper documents for local government and business people. I earn \$15 per week from this business."

Theoneste Hagenimana, manager of the Mayange Internet Shop



Technical Solution Details

Community Phones	Investment	Pricing
Avvio G201 mobile desktop phone	US\$170 per unit	US\$0.22 per minute (average call charge US\$0.10)
32kb SIM card running the SharedPhone application software		
US\$28 (15,000 RWF) of airtime		
35 amps battery		
Phone battery adapter		

Community Internet	Investment	Pricing
3 Inveneo PCs and 3 Sony laptops	US\$5500	US\$0.20 per 15 minutes of Internet access
2 HP 4280 all-in-one printer, scanner, photocopiers		
2 Ericsson W21 Fixed Wireless Terminals		
2 EDGE-enabled SIM cards		
2 Canon Powershot cameras		
2 spare ink cartridges		
2 spare photo paper		
2 spare A4 printing paper		

“This project demonstrates how GSM-enabled phone and Internet services can play a key role in improving quality of life in ‘base of pyramid’ markets through the creation of entrepreneurs, commercial sustainability, and access to information and communications.”

Robert G. Conway, Chief Executive Officer and Member of the Board, GSMA

Results: Phone and Internet Services Increase Revenue per Week by More Than 20%

The pilot, which ran for a period of three months, aimed to test the business model and viability of both the Community Phones and Community Internet businesses.

Both services have proven to be popular with the community. The GSM phones are being used to communicate with family and relatives across the country, access market information to understand prices and value of produce, and arrange informal remittances. The Internet is primarily being used for email, local and international news, job searches, and entertainment such as music and sporting results.

These uses, among others, have resulted in an increase in income for Community Phone entrepreneurs of 22% per week, and Community Internet entrepreneurs of 20% per week. These results are in line with other Community Connectivity pilots in Africa.

Results Summary

Community Phones
Income increase per week: 22%
Average revenue: US\$3.60/week
Average number of customers: 53/week
Average minutes sold per day: 7.5 (minimum 3, maximum 12.2)
Average call duration: 32 seconds

Community Internet
Income increase per week: 20%
Average revenue: US\$12.93/week
Average number of customers: 50/week
Average minutes sold per day: 70
Average time spent on the Internet: 10 minutes per user per day

While the revenue in Mayange is less than the target of US\$5.20 per week for voice and US\$16.72 per week for data, which reflects the lower economic wealth of the area relative to other regions, the overall results demonstrate that phone and Internet services are needed, are being used, and positively impact social and economic development.

The results also demonstrate an alteration in network usage over a three month period, with MTN’s Nyamata base station usage increasing by 12% and Gako base station usage increasing by 2%. In addition, the Maranyundo site is currently being expanded to enable greater capacity to meet the demands.

The project highlights the need for increased connectivity and mobile-based value adding services such as banking, health, agriculture and educational information, which will drive additional usage of the services and further benefit the social and economic development of villages like Mayange.

The GSMA Development Fund

The Development Fund is a core part of the GSMA, the operator-led trade association representing the mobile industry. We work with mobile operators to accelerate mobile solutions for people living under \$2 per day, bringing socio-economic benefits to individuals and communities. We do this by catalysing innovation, driving market scaling, and increasing knowledge networking in our three areas of focus: Connectivity, Energy and mServices.

To date the GSMA Development Fund has delivered 26 projects in 14 countries with 21 operators, benefiting the lives of over 150,000 people directly and 1 million indirectly.



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