

**BURUNDI TELECOMMUNICATIONS
CELLULAR TECHNOLOGY ADOPTION IN EAST AFRICA. 2000-2003**

David Walega, May 29th, 2006



Introduction

Burundi's rural poor have limited access to communication systems for information gathering to facilitate economic development. The people rely upon traditional media for information and current news. Due to low literacy rates as a result of a declining educational system and limited newspaper circulation, radio has been the predominant channel for information collection.

Communications between individuals is limited to word of mouth contact. Dialogue between geographically distant individuals non-existent. The minimal investment of government support for communications infrastructure, political instability due to ongoing conflict, and limited foreign investment has resulted in a majority rural poor population suffering from economic hardship.

A former Belgian colony, Burundi has been plagued by political and financial instability since independence in 1962. A negotiated peace in 2005 with the rebel factions has essentially ended the twelve-year civil war. The president has stated policies to establish a stable economy and restructure its educational system.

Military spending has dominated the sparse government expenditure since the start of the civil war in 1993. Little to no infrastructure for public education exists. A shifting internally displaced population chiefly agrarian in lifestyle has disrupted a consistent and formal education system. The absence of students and educators in the schools can be traced to the experience of children witnessing atrocities in and around schools during the ethnic killings of 1993 and the school fees that most rural families cannot afford.

Burundi's existing telephone mainline system is primitive, and connection outside the capital Bujumbura essentially non-existent. The waiting time for a telephone mainline in 2000 was seven years. "Mobile phones have become indispensable in the rich world. But they are even more useful in the developing world, where the availability of other forms of communication - roads, postal systems or fixed-line phones - is often limited."¹

A country with limited natural resources and high population rates, Burundi possesses restricted information systems under government control. The only in country news agency *Agence Burundaise de Presse (ABP)* and major news paper *Burundi Quotidien* are both owned by the government. One state run television station is broadcast during the day and several independent radio stations attempt to broadcast non-biased reports outside the government system.

Subject to critical government suppression, Reporters without Borders in their Annual Report 2002 state "...journalists are still constantly in the Burundi army's sights. Apart from this crisis in which the government needed the private media (during an attempted coup of the government in April 2001 the local radio stations were requested to collaborate and help denounce the attempted coup) journalist have been victims of repression by the Burundi army."²

The adoption of digital technology is having a transformative affect in many parts of Africa. People outside the formal economy buy into the communication system with

¹ "Calling an end to poverty; Mobile phones and development," The Economist. London: July 9, 2005, <http://proquest.umi.com.offcampus.lib.washington.edu/pqdweb?did=864672831&sid=4&Fmt=3&clientId=8991&RQT=309&VName=PQD> (accessed April 2006).

² Reporters with out borders, "African annual report, Burundi - Annual Report 2002," Reporters with out borders website, http://www.rsf.org/article.php3?id_article=1724&var_recherche=burundi (accessed May, 2006)

pre-paid cellular telephone services. BBC Focus on Africa reports “Their (cellular phones) impact on governments, business and civil society has been a powerful force for change in Africa.”³ Journalists equipped with cellular phones have profound effect on political systems in Senegal and farmers have increased bargaining power in Uganda with access to market prices and collective bargaining power.

The adoption of technical innovation in poor countries is not without its precedents. The invention of the transistor radio spread broadcasting throughout the world and still remains one of the most effective channels of information transmittance.

“Here was an example of a technological innovation developed in the West, meeting one kind of market demand there, being transferred very successfully to non-industrialized countries and becoming a very significant innovation there- making perhaps, even more social, cultural and political impact than in the west where it came.”⁴

The freedom from large batteries and electrical sources came with this low-cost power source enabling the technology to be adopted by even the most rural populations. The transistor revolutionized broadcasting through portability and accessibility perfectly suited to the environment of Africa and had a fundamental effect on the way communications occur. “Within a short period of time, the transistor made radio into a truly global mass medium, penetrating even some of the poorest areas.”⁵ As the cost of hand held phone devices drops, the establishment of mainlines discontinues while the

³ Mark Arhrst, “Mobile Revolution. “ *BBC: Focus on Africa Magazine*, January 2004.

⁴ Richard Fardon and Graham Furniss, *African Broadcast Culture: Radio in transition*. (Oxford: James Curry, 2000).

⁵ Richard Fardon and Graham Furniss, *African Broadcast Culture: Radio in transition*. (Oxford: James Curry, 2000).

efficiency of mobile technology increases, will mobile technology adoption mimic that of the radio in contemporary Africa?

The combination of pre-paid mobile phones, cellular technology and evolving communications systems throughout Africa is expected to have positive socio-economic effect on many countries. Boosting the confidence of multinationals to invest in systems throughout Africa is the challenge. Burundi's situation is not unique within sub-Saharan Africa. Years of instability and repressive rule had shed a skeptical cloud over foreign investment. An embargo enforced by neighboring countries following the attempted Tutsi-led July 1996 military coup have had lasting effect on Burundi's exports and import economy. "Some of the sanctions were eased in April 1997, and a regional embargo was lifted in April 1999, but the process of economic recovery has been slow."⁶ The government of Burundi is eager to encourage foreign investment and economic activity. By easing licensing policies for multinational investment and fortifying communications infrastructure, the latest administration seems poised to pursue this goal.

The purpose of the study

The purpose of the study will be to examine the impact of cellular technologies on Burundian populations. With the adoption of cellular phone technologies, will the availability of communication have a transformative effect on the socio-economic environment? The adoption of emerging communications technologies and the

⁶ Mark Arhrst, "Mobile Revolution. " *BBC: Focus on Africa Magazine*, January 2004.

acquisition of information in post-colonial Burundi will be examined through case study methodology and information gathered for 2000-2003.

Objectives: Determine

- Position of cellular technology and the equitable access to it.
- Rate of adoption of cellular technology.
- Communications industry statistics in Burundi.

Through select data collection:

- Sales of prepaid calling cards.
- Land line creation
- Cell phone ownership.
- Small business creation/ positive economic influence from telephone service industry investment.

Conceptual framework and research questions

The conceptual framework for this study is derived from John Pilgers' *The New Rulers of the World*. Pilger discusses the lasting effects of colonization and globalization on the infrastructure of developing nations and their economic stability. Pilger describes globalization as the new version of 'old' imperialism. Burundi's history is marked by the influence of imperialistic forces, changing the social, political and economic condition. By favoring one social group over the other, Belgian administrators created a separation of ethnic classes through economic empowerment. In contemporary times Burundi has experienced the effects of the 'new' imperialism in the form of globalization and exclusion from the 'global economy'.

Pilger identifies the impact of globalization on developing nations:

- Manipulation of the local government for the benefit of imperialistic forces.
- Rejection of the state of its social function with repression of democratic freedoms.
- Degradation through indebtedness (IMF, World bank) and lack of participation in international commerce.

I will identify these characteristics relative to Burundi's current condition and the role of information systems 2000-2003.

Research questions:

- What is the impact of cellular technology on information gathering in Burundi?
 - Information: operational definition= dialogue concerning social and economic change.
- What are the factors that would influence the adoption of cellular technology in Burundi?
- What is the impact of cellular technology on rural poor in Burundi?

Significance of this subject to scholarship

This case study will add to scholarly discourse of African societies and the adoption of communication technologies in rural communities. Establishing a case study of the adoption of cellular technology and its effects on the socio-economic situation in Burundi will enlighten the possibilities to eradicate rural poverty through open public discourse.

Methodology

The findings were derived from data collected from multiple sources, principally through participant interviews, archival materials, and direct observation. Having traveled and worked for a six-week period in Burundi in 2002, my personal observations have been considered as well as the perspectives of in country participants. I chose individuals who have worked in Burundi for an extended period of time. The principal contact is Tony Tate, Human Rights Watch Burundi researcher from 1999- 2002. His work brought him into contact with every segment of the population, from boardroom meetings in the capitol to the most remote mountaintops of the country. He interacted with citizens from every social-economic situation. His observations were invaluable to

this study. Trained as a researcher who specializes in African studies, particularly the plight of internally displaced peoples, his knowledge of Burundi social systems were invaluable.

Additional sources of data came from industry and technology trend reports of eastern and Sub-Saharan Africa.

Assumptions and limitations

Cell phone use is the predominant source of information gathering in Burundi second to radio listening. Cell phone rates are still beyond the economic capacity of most Burundians, however the numbers of radio listeners is not easily quantifiable due to a tradition of group listening in Africa. The numbers of cellular phone users can be estimated through data collection methods mentioned previously. The availability to industry information within the Burundi communications industry is quite limited.

The traditional channels of information gathering in Burundi are very difficult to quantify through user participation. Multiple users often have access to a single cell phone limiting the accurate number of actual cell phone users. Radio listening and newspaper readership are also difficult to quantify because of the nature of group sharing within traditional sources of information.

Group listening is predominant among the population where one radio is placed in a group setting for many to hear. A similar situation is expected with cell phone use. However, cell phone use can be estimated through the amount of pre-paid phone cards sold, actually sales of cell phone devices, local businesses selling phone cards and demand for cell phone service.

Findings

The adoption of cellular technology in Sub-Saharan Africa is increasing in record numbers. During the period from 1999 through 2004, the number of mobile subscribers in Africa jumped from 7.5 million to 76.8 million, an average annual increase of 58 percent.⁷ The geographically dispersed population and lack of landline infrastructure has produced a fertile environment for cellular technology. “Africa has an average of just one land line for every 33 people, but cell phones are enabling millions of people to skip a technological generation and bound straight from letter-writing to instant messaging.”⁸ The pre-paid mobile-phone business model has suited the cashed-based African economy well. “(When) African nations began to privatize their telephone monopolies in the mid-1990's, and fiercely competitive operators began to sell air time in smaller, cheaper units, cell phone use exploded.”⁹ The governmental policy of privatization of communication systems has benefited the consumer with economically feasible rates and greater accessibility.

Mobile technology has been a direct force for change in many African countries. The technical revolution has given rise to a social change within the poorest of populations. Mobile phones have presented "millions of people access to basic telecommunications services for the first time while also enabling those

⁷ *Sharon LaFraniere*, “Cellphones Catapult Rural Africa to 21st Century” *New York Times*, Aug 25, 2005, late edition (East Coast), pg. A.1.

⁸ *Sharon LaFraniere*, “Cellphones Catapult Rural Africa to 21st Century” *New York Times*, Aug 25, 2005, late edition (East Coast), pg. A.1.

⁹ *Sharon LaFraniere*, “Cellphones Catapult Rural Africa to 21st Century” *New York Times*, Aug 25, 2005, late edition (East Coast), pg. A.1.

forced to migrate to the cities for work reasons to communicate with far-flung relatives.”¹⁰ A recent study from the London Business School reports that the adoption of ten mobile phones per 100 people produces a GDP growth of 0.6 percentage points,¹¹ a direct result of the access to cellular technology. The adoption of this technology has had a positive affect on developing nations and is expected to produce the same results within African nations.

The communication system in Burundi is largely undeveloped as result of the thirteen-year civil war. The expansion and maintenance of the telecommunications networks has been non-existent since the war began in 1993. With three landlines for every 1000 people (2005), Burundi has one of the lowest telephone densities in the world.¹² However in Rwanda, a country that shares a similar history of colonization and political bloodshed, the population possesses twice the mobile phone subscribers of Burundi with a population that is only 20% larger. If disposable income is the factor heeding the growth of the adoption, and the Rwandan economy mirrors that of Burundi, what has kept the communications of Burundi static?

According to participant observation in Burundi, the access of cellular adoption is limited to the capital of Bujumbura and among the urban residents.

“In the past, landlines were the only telecommunications available and

¹⁰ Nic Fildes, “Mobile-Phone Service Benefits Africa,” The Wall Street Journal. February 16, 2005, Eastern Edition,

<http://proquest.umi.com.offcampus.lib.washington.edu/pqdweb?RQT=572&VType=PQD&VName=PQD&VInst=PROD&pmid=7510&pcid=14728271&SrchMode=3>

¹¹ “Calling an end to poverty; Mobile phones and development,” The Economist. London: July 9, 2005, <http://proquest.umi.com.offcampus.lib.washington.edu/pqdweb?did=864672831&sid=4&Fmt=3&clientId=8991&RQT=309&VName=PQD> (accessed April 2006).

¹² Economist Intelligence Unit, “Country Profile - Main report: May 10th 2005 Resources and infrastructure: Transport, communications and Internet,” eiu.com, http://portal.eiu.com/index.asp?layout=displayIssueTOC&toc2=no&issue_id=1425473542&publication_id=440000644 (accessed May 15, 2006)

were not widespread even among businesses and homes in the cities. The introduction of cell phones to urban workers has made appointment setting, meeting scheduling and other basic tasks we take for granted much easier and has obliged workers to schedule their days in such a way that was not previously required or expected.”¹³

When cellular phone service was introduced in 1999-2000 the initial reception and clarity was good when compared to neighboring Rwanda, Tanzania and Kenya. The service has become less effective as more people have joined the network, indicating that the rate of adoption has increased substantially in the last five years and that the network is unable to accommodate all users.

Government workers, private business and foreigners are the most likely to utilize cellular technology. With poor network reception in many rural areas, urban dwellers in Bujumbura are the principle users of the cellular phone network. Only 4.4 % of the population of Burundi lives in Bujumbura, leaving a majority of the country outside of the accessibility to the network. The popularity and status of mobile phone ownership has encouraged the adoption of this technology among urban students, house workers, drivers and others spending significant time in the capital. “This suggests that a significant percentage of their income is spent on cell phone use and maintenance and that other expenditures may have been curtailed or eliminated to afford this relative 'luxury' item.”¹⁴

¹³ Tate, Tony, Personal Interview, Children’s Rights Division/Africa Researcher Human Rights Watch, (April 22, 2006).

¹⁴ Tate, Tony, Personal Interview, Children’s Rights Division/Africa Researcher Human Rights Watch, (April 22, 2006).

Burundi has three mobile networks: Spacetel, Telecel, Africell, and Onatel (Office National des Telecommunications). With cell phone coverage focusing in and around the capitol of Bujumbura, Onatel is the only company that covers most of the country. Radio remains the prominent source of communication and information. The traditional medium of information in Africa, Burundi has a variety of stations broadcasting, from government owned and sponsored to the independent and commercially owned Radio Isengaro. The one television station is state-owned and broadcasts pro-government materials on a limited schedule.

The Burundian governments' policies toward communication systems appear to be more favorable than many African countries. A regulatory body does exist to pre-screen radio and television broadcasts for 'sensitive' topics such as ethnicity and national unity. There is some evidence to support some cell phone agents listening in on conversations for similar reasons.

Analysis

The use of cell phones has dramatically changed the way organizations do business and collect information in the capital and other large towns. Previously, landlines were largely unavailable in the countryside and in short supply among many homes and businesses in the capital. The adoption of this technology in the capital suggests that productivity and output has increased. “The introduction of cell phones to urban workers has made appointment setting, meeting scheduling and other basic tasks we take for granted much easier and has obliged workers to schedule their days in such a way that was not previously required or expected. “ The cost of cell phone ownership has limited the adoption outside of the urban areas amid the poorer populations. The establishment of a pre-paid service versus a post-paid subscription based service has increased cellular use. By acclimatize to fit the cash based economy of Africa, some communications providers successfully tapped into the local economies. The majority of phone communication is limited to setting appointment times, while longer conversations are conducted face to face to discuss news and current events.

Radio broadcasts remain the predominant source of information gathering. A 2005 report on communications services by the Economist Intelligence Unit reports “There is a surprising plurality of choice on the airwaves, and considerable freedom of expression.” With negligible newspaper circulation outside of Bujumbura and a literacy rate of 51.6% (age 15 and over can read and write) these factors contribute to the lasting influence of radio the predominant information channel.

The adoption of cellular technology is influenced by four identified factors: price, availability, usefulness and literacy. By far the most important factor is the

price per handset and airtime service fees. In a predominately cash based economy where a handset can cost as much as \$200 (US), the cost is by far the biggest obstacle to acquisition as it would demand a large portion of the average Burundian income (600\$ GDP in 2005) to purchase one. Service providers in developing countries are beginning to realize the market potential of these economies. In 2005, the GSM Association formed in order to promote the use of GSM (global system for mobile communication), the world's mobile phone standard of digital cellular technology used for transmitting mobile voice and data services. This global association representing more than 690 GSM mobile phone operators across 213 territories and countries of the world joined together to encourage industry producers to supply up to six million handsets for less than \$40 (US) each to poorer markets. Its estimated that markets would double in Africa and the Middle East if handsets were sold at \$30-\$60 (US).¹⁵

The absence of services outside urban centers and larger communities limit the acquisition of cellular technology to the majority of the people. Perceived usefulness and low literacy rates are also factors among this agrarian population. As familiarity with the devices increase, the desire for the technology is expected to rise.

The impact of cellular technology on the rural poor has remained restricted in that most rural areas are outside of the cellular phone network. Where it may have the most impact is in widening the socio-economic divide between the rural

¹⁵ "Calling an end to poverty; Mobile phones and development," The Economist. London: July 9, 2005, <http://proquest.umi.com/offcampus.lib.washington.edu/pqdweb?did=864672831&sid=4&Fmt=3&clientId=8991&RQT=309&VName=PQD> (accessed April 2006).

poor and urban citizens.

“Because Burundi is a small country and distances between urban areas small (generally less than 40 miles) it is likely that most rural people do have familiarity with cell phones and in this case, the impact may be enormous, on creating inferiority among rural poor who can not use or afford cell phones.”¹⁶

Widening the gap between ‘traditional’ and ‘modern’ workers may also be a result of this inequality further increasing a sense of inferiority among the rural population.

Conclusion

Under colonial rule Burundi experienced little economic development. Burundi came under the rule of Germany in 1890 and became part of German East Africa. Belgian would later become its administrator under a the UN sanctioned agreement. The spread of Christianity and imperialistic subjugation under these administrations would alter the balance of powers between the original settlers of the land, the Tutsi, Hutu and Twa. These administrators favored the tall and slimmer Tutsi over the Hutu. Given positions of prestige and responsibility, the minority Tutsi helped rule and administer over the majority Hutu population. This system of lord-serf governance benefited the colonial forces. The production of tea and coffee thrived, but Belgian did not encourage a variety of economic development outside of the agricultural industry. Once independence from Belgian was gained in 1962, the country became battered by

¹⁶ Tate, Tony, Personal Interview, Children’s Rights Division/Africa Researcher Human Rights Watch, (April 22, 2006).

interethnic fighting, the result of years of subtle manipulation from colonial influence and frustration from the majority Hutu towards the Tutsi.

Years of civil war have resulted in the disruption of the education system and economic growth to the detriment of the social infrastructure. Government spending on the army has intensified the economic hardship of the population while public assistance is nonexistent. Caught between the warring factions struggling for power, the civilian population is often the focus of both groups. Burundi contains a large population displaced within its borders. Seen as potential rebel sympathizers, the rural poor are given no assistance through social or economic policies. The freedom of expression is constantly under attack and the media government regulated. The communication systems have been neglected by the years of disruption and lack of positive government policy toward infrastructure building.

Through communication systems, people begin to discourse and join together to overcome adversity and economic hardship. Colonialism does not encourage this nor does it benefit a repressive government to foster such communication. The Brazilian educationalist Friere states that social change happens when critical thinking is a component dialogue in a society. If in a society no dialogue occurs then critical thinking does not exist. If dialogue does not exist, as Friere defines it, then education and social reform are never challenged under imperialistic rule, therefore social change does not take place. The current state of militaristic governance in Burundi has been tolerated as a result of the lack of education and public discourse. If cellular technology helps to facilitate a dialogue between citizens to take place perhaps social change will

take place. The lack of discourse and social change is a direct reflection of these repression tendencies to limit education and dialogue.

Instability has not encouraged foreign investment. The attempted military coup of 1996 further distanced Burundi from its trading partners in the area. An embargo of shipments left the country virtually adrift to fend for itself. Reliance on coffee and tea production, which accounts for 90% of its foreign exports, is dependent on weather conditions and falling international prices. The lack any natural resources unique to the countryside, save for the rich volcanic soil, Burundi contains little to entice the international trade partners to invest in industry. A small but productive beer industry produces a nominal amount of export goods.

The modern age of globalization has not benefited small African countries with troubled political pasts. The result is instability and a skeptical international community resistant to invest in industrial entrepreneurial ventures. The lack of participation in international commerce can be directly linked to the amount of rural poor. No opportunities exist to expand ones accessibility to economic prospects beyond the existing situation In the contemporary market where cheaper goods are readily available from a multitude of sources, the production of goods from Burundi leave it with little leverage in international trade to the detriment of the greater population. The current administration seems poised to go beyond past policies and has announced plans to improve the economic situation of all Burundians.

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