

The Cell Phone Revolution in Kenya

by June Arunga and Billy Kahora



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Summary

Contemporary economists worldwide now realise that economic development is not just a matter of more capital generating more goods to be traded by more people. Rather, the emphasis now is on the development of knowledge about what can be done, who can do it and for whom. Markets emerge as suppliers find out what consumers want and how to provide for those wants most effectively and hence profitably. The profits then fund new investment for growth.

Seen in this light, the story of the cell phone revolution in Kenya is fascinating. The state failed dismally in the provision of communication services, having focused, as state provision always does, on the technical and engineering matters of traditional telephony. Worse, the incentives in the state-owned organisation bred fraud, corruption and indolence. There was no cost of failure or benefit from success.

The cell phone phenomenon burst onto the scene at the turn of the 21st Century. Competing players in the market did not really know what customers would want, what price they would pay, or what benefits they would gain from a cell phone. They soon found out.

Millions of Kenyans purchased cell phones. At first, they were expensive, rather unwieldy, and none too reliable. A technical adviser to a government would no doubt have advised against introducing them. But suppliers and customers soon got to know the benefits: business could be done, distant families could be supported and – anathema to the bureaucratic mindset – a lifestyle could be aspired to merely by the fact of ownership.

Over time, prices and service packages were adjusted as suppliers competed to find out the most advantageous way to serve their customers. In the process, they poured new capital into their systems on the basis of

phenomenal growth in custom. Knowledge grew and everyone benefited.

And the ground rules of this revolution? Simple really: private property rights and the freedom to trade.

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Introduction

In the mid-1990s Francis Munyua, 39, had recently taken early retirement from one of the leading banks in Kenya. After seven years at the bank, this meant a golden handshake, money he used to open a shop supplying vehicle spare parts.

The spare parts shop was located East of Nairobi's Central Business District (CBD), a place called Kariobangi. He had no idea that it would be a 24/7 commitment. Ironically, one reason he had left the bank was to get away from the long working hours.¹ But the spare-part business was no dream "make money while you sleep" venture. Francis quickly discovered he would soon close down if he waited for his suppliers to deliver on a pre-arranged schedule and for his customers to physically come to him for parts. It was imperative that he chase suppliers and customers continually, something that could only be facilitated by a round-the-clock communications service.

He used the landline at his shop during the day and the pay-phone next to his house for calls at night. The reality of the market he was in was that he had to communicate rapidly across an ever-growing business network. He needed to respond to customers quickly and buy supplies fast.

Francis had tried installing a landline at his home through the state-owned Telkom Kenya but gave up six months later in exasperation. He lost US\$300 in the process (Kenya's GDP per Capita is estimated at about US\$325 p.a.). Numerous trips and painfully long queues at the Ronald Ngala Street branch of Telkom proved fruitless. He had given a Telkom officer some "incentive" to broker the deal for him but that man never seemed to be around. Several times, he was told that the man was

not far from the office because his coat was still draped over his chair. After two weeks Francis found out that this meant nothing – the guy could never be found. One day he did find him but then there was no driver to assist with the job. Francis was told that he too wasn't far away because his jacket was also still hanging off his chair. Then, when the driver was finally located the technician was not around – and yes, his sweater was hanging off his chair.

When Francis finally asked for his money back his "broker" told him that the personnel needed to install his landline was available but Telkom had "lost" two vehicles in the neighbourhood where he lived and had subsequently suspended all activities in that area. The man laughed and asked him why he lived in Kariobangi, a place full of Mungiki people and not safe for Telkom Kenya.²

At midnight one day, Francis heard a familiar knock at his gate. It was the neighbourhood watchman. Francis paid him to receive his calls at night at the public phone booth outside his house.

The message was from one of his suppliers, offering a consignment of parts from Dubai. Francis placed his order. Then his supplier asked him whether he was interested in cell-phones. When he said no, his supplier rang off, cryptically saying: "That is where the money is going to be soon." Francis noted the comment but did not dwell on it until a thought struck him – a cell phone could be the perfect answer to his problems, a 24-hr communications hub in his hand.

Francis started asking around about the new technology but the prices seemed prohibitive. He soon decided that starting a business selling cell phones was out of the question. He was, however, interested in a cell-phone for his own use and after doing some calculations decided

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that he might just be able to afford one. Even if it could not initially be justified economically, he valued his own sanity and that of his family.

When the phone booth outside his house stopped working for a week, the issue was decided for him. A cell phone, he decided, would give him a reprieve.

Francis had left his bank job because he believed that life was not a rehearsal – and with the same philosophy he invested in a cell phone. It was a “brick”, huge and clunky. He can laugh at the memory now. It cost him a whopping US\$3,000, twenty to twenty five times the price of a standard cell phone today. He bought a SIM card for close to US\$100 – it comes as part of the service today. Even then, many a time he had to “roam” around just to get his network’s signal. His investment was not foolproof but it helped solve a lot of his problems.

Francis’s decision to buy a cell phone was half-logical and half a hunch – but it illustrates a key theme of this paper. Economic development emerges in ways that are not easily seen by planners who cannot know the incentives and disincentives that generate buying decisions.

The development of telecommunications markets in Kenya offers an excellent comparison between planned development by government and spontaneous development through the actions of many individuals like Francis. The development also illustrates well the effects that competition in private markets can have on producers to the benefit of consumers.

This paper examines how these results come about on the basis of observations on the Kenyan experience. These throw light on the way that market competition affects the way business operates and can enforce best practice.

- We describe how the state-controlled industry failed its own workers and its customers.
- We show how the new cell phone industry entered the field and provided a new service that created new opportunities for many.
- We compare the priced service model with the state-controlled regulated model.

- We describe how new opportunities in new markets can provide an engine for growth that no planner can anticipate.

State owned telecommunications in Kenya: the coat over the empty chair

Before 1998, all telecommunications in Kenya were controlled by the state-owned monopoly Kenya Posts and Telecommunications Corporation (KP&TC).

In 1998 the Kenyan Parliament passed the Kenya Telecommunications Act as proposed by the Communication Commission of Kenya (CCK). The regulatory body is in charge, at least in name, of the telecommunications sector in Kenya and the Act made KP&TC defunct.³ CCK then set up Telkom Kenya in 1999. Since then, information about this new behemoth, and its predecessor, that employs thousands has been gradually emerging.

In a recent audit done on Telkom Kenya by PKF Consulting it was discovered that the state-run entity was the biggest employer of watchmen (security guards) in Kenya with a total of 1,009, plus 1,115 messengers and 1,028 porters.⁴

The report found that at least 18% of employees were primary school graduates and only 65% had secondary school education. Only 2% were university graduates. Throughout the 1980’s and the 1990’s KP&TC had become famous not for bringing communication to Kenya but for the absenteeism of its employees. It has been claimed that half of its employees were, in effect, ghost-workers.

The audit report validates the anecdotal. George Kamau, a clerk who worked at the Ronald Ngala branch from 1987–1996 says that at the start of the business day, of the tens of staff who would walk into the office, at least a third would drape their coats over their chairs and leave to do “business”.⁵ He says they would pop in occasionally during the day, just to show their faces and leave again. “As long as the coat or sweater was there they were considered to be ‘around’,” he laughs. Many employees maintained a small wardrobe in the office just to keep up appearances.

The coat over the empty chair, in a warped sense, came to represent the appearance of a formal worker while in truth the real informal self was making money elsewhere. One of the more famous stories about former President Moi's regime recounted again and again claims that KP&TC vehicles would drive into the predominantly-Kalenjin Rift Valley and request all those who wanted jobs as porters and messengers to pile in. George Kamau, the clerk who worked there for nine years, says he does not know if this is true, but adds that everybody noticed a sudden influx of Kalenjins over the 80s and 90s in the Ronald Ngala office. An article in the weekly East African posed the question: "why does a company need so many porters and 1,000 messengers in a world where communication is mostly done through e-mail and other communication media?"⁶

The anecdote of the coat over the empty chair illustrates how the microcosm of individual human actions can translate into structural institutional failure, and that is what happened to the state-controlled Kenya Posts and Telecommunications Corporation. Through the years that it remained a monopoly it failed to make any commercial progress. The corporation made huge losses over the years and while having the appearance of economic importance it seemed best at serving as a cash cow for the individuals at its helm.

Little seems to have changed since. In a recent article in The East Africa Standard, business journalist Gordon Opiyo says: "Top officials of Telkom Kenya are involved in fleecing the cash-strapped company of billions of shillings, according to independent investigations by the Communications Commission of Kenya."⁷

The article says that, in the estimation of then Transport and Communications minister John Michuki, Telkom had lost over KSh.20 billion (close to US\$2 billion) in the previous seven years.⁸

To students of the history of nationalised industries worldwide the facts and the stories above will come as no surprise. Their extent is however, acute and an object lesson in how, where incentives to act on behalf of consumers are missing, workers and management will collectively and routinely serve their own interests.

Over time, commercial progress and development inevitably falters and in extreme cases reverses. As we

shall see, this failure is made worse when political actions intervene to move arrangements yet further away from private property rights defined by the rule of law. That which governs what management and workers may do, how they do those things, and on whose behalf they do them tends to depart radically from a focus on communications services.

Government interference in new communications markets

The Communications Commission of Kenya (CCK) came to the fore in 1999 as an independent regulatory body, separate from government, tasked with opening up the telecommunications industry. Its chosen route was a mix of corporatisation of the KP&TC state monopoly (re-branded as Kenya Telkom) and the release of new licences to allow competitors into the communications industries markets.

However, government interference in the role and management of Telkom, formerly KP&TC, has been notable. In addition, the Kenyan government recently dissolved the board of the Communications Commission of Kenya. CCK had shown itself to be reform minded, favouring competition in markets with multiple players. Set up by statute as an independent regulator whose director-general had tenure of office, it appears to have been a thorn in the government's side for the few years of its existence. Control of the communications sector now lies within the politicised decision-making process of government.

In November 2005, Information and Communications Minister Raphael Tuju attempted to cancel a mobile-phone network licence awarded to Econet Wireless Kenya after it had paid US\$15 million for it. This was then ruled unlawful by the High Court on the basis that Tuju "could not cancel a licence since it amounted to usurping CCK's regulatory role." This was in fact the second ruling against Tuju by the High Court: Tuju had earlier tried to call off a tendering process for Kenya's second fixed-line telephone operator.

There have been important and immediate economic ramifications to this government interference – even where it has been unsuccessful. The CCK's independence and determination to open up the

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telecommunications industry led to investment of millions of dollars by local and foreign companies. Today, more than 100 companies waiting for the CCK to process new licences are locked into a new opaque regulatory regime. Knowing that the board's dismissal will further complicate their aim to compete in the industry.

Government control and regulation here threatens jobs, cheaper prices and better service. These actions additionally endanger not only the future of the communications industries but of other long-term investments countrywide. Local and foreign businesspeople will now pause before allocating funds for Kenyan business opportunities that require investment in fixed assets and a multi-year commitment. Government interference has directly threatened Kenya's further economic development.

State failure versus private progress – a damning policy comparison

When it comes to choosing one policy over another to enhance development, having access to quantified evidence from the past that suggests potential outcomes in the future is more than useful. Luckily, the short period of tenure of the CCK allowed for the development of a large enough private sector operating in competition to Kenya Telkom to begin to show what could be possible.

A landmark study by Michael Tyler, Janice Hughes, and Helena Renfrew, "Telecommunications in Kenya: Facing the Challenges of An Open Economy", tells an extraordinary story in facts and figures. The researchers set out to "provide an overview of telecommunications in Kenya, discuss major policy issues facing the sector in the 1990s, and review research conducted in Kenya over the last decade on the economic role of telecommunications and the benefits of investment in telecommunications."

Many previous studies have been done, some commissioned by KP&TC itself. But in our view these have failed to ask the right questions – skirting the issue of why bureaucratic state run entities like KP&TC have such a bad name – and have reflected badly on African governance in general. KP&TC was allowed years of

monopoly and Telkom Kenya still enjoys relative immunity. As we shall see, their performance has been dismal and one has to conclude that earlier studies have done no service to the very people they are written to help – the taxpayers.

According to Tyler et al., there were 184,583 working exchange lines in operation in 1993, having doubled since 1983. However this mere doubling comes within the context of 5.5 million cell phone subscribers in Kenya today, starting from zero less than 10 years ago. There are, in fact, more landline telephones in Manhattan than in the whole of sub-Saharan Africa not including South Africa.

Tyler et al.'s case studies reveal a failing communications service in Kenya before the cell phone. In 1990, only 48.1% of call attempts on the long-distance network were being completed successfully. Domestic calls were slightly better at 53.7%.

The story of Francis Munyua's experiences (in the first section of this paper) while trying to get a service installed shows the difficulty of getting a landline in Kenya in the 1990s.⁹ Tyler et al.'s study emphasises that demand was always high in Kenya for the service and that Francis was one of a long waiting line of subscribers. "A comparison of a country's waiting list with the scale of the existing telecommunications service provides a good indication of the size of the problem. The problem in Kenya has been substantial and greater than in many other developing countries – although not on the crushing scale experienced by Egypt or Nigeria, where the size of the waiting list is comparable to the size of the entire existing telephone system."¹⁰

The only relative KP&TC success according to the Tyler et al. study was public pay phones: "By January 1, 1993, there were 5,613 public payphones in operation – one of the highest country totals in Africa." The study adds that KP&TC also appeared "to have been fairly successful in keeping its payphones operating reliably by clearing faults promptly and emptying the coin boxes regularly."¹¹

In contrast with the above failure in service growth, when the telecommunication authority allowed some private companies to enter the market a much different

outcome emerged. Currently, there are two private telephone companies, Safaricom and Celtel, both offering cell-phone services. The number of their telephone subscribers has risen rapidly over the past six years. According to industry experts, in June 1999, Kenya had 15,000 mobile phone subscribers. By the end of 2004, there were more than 3.4 million subscribers.¹² So around one in eight people has a mobile phone in a nation of approximately 32 million people.

Telkom Kenya Limited owns 60% of Safaricom, with 40% owned by Vodafone AirTouch, headquartered in Newbury, Berkshire, England. This mobile phone service provider has attained the three million active subscriber mark ahead of its forthcoming fifth birthday, a “momentous feat”. The firm’s unrelenting growth can be attributed to an ongoing nationwide network expansion project that has seen more than 200 rural trading centres connected to Safaricom. The quality of the network has improved substantially over the past few years.¹³

This very rapid growth in services is typical of what becomes possible in developing nations when government control is removed from investment decisions and regulations are not crushing private entrepreneurship. Crucially, within the context of the growth in communications, the new services form an integral driver within a much larger engine of growth across all commercial sectors. As we shall see, the supply of communications and those who use their capabilities generate development far beyond anything that could be envisaged by any planner in the bureaucracy.

Communications, the cell phone and the kenyan economy

“People want to talk to other people – not a house or an office or a car. Given a choice, people will demand the freedom to communicate wherever they are, unfettered by the infamous copper wire.” *Martin Cooper*¹⁴

Today, owning a cell phone in Kenya, like in most of Africa, is as much a personal decision about how life should be lived as a realisation of the age-old idea that prosperity is built on the ability to establish effective communication. At the heart of the demand for cell phones today are two parallel ideas.

The first is on being modern and in touch with the zeitgeist. This means being plugged into some form of telephony. Cell phones may not be as necessary to our survival as food, clothing or shelter but they have become important to acquiring these necessities. They have also become accessories, emotional buffers, conversation fillers, along with watches, calculators, radios and entertainment devices. As a metaphor, the cell phone in Kenya is at odds with its predecessor, the landline, which has always been linked to a government-owned monopoly. To acquire one, you had to bribe, cajole or threaten a bureaucratic functionary: it represented red tape, legalese and privilege. In contrast, the cell phone is private, personal, easily accessible, class-less and cool.

Secondly, today, the cell phone is central to Kenyan economic growth. In Kenya as in all economies, the exchange of goods and services begins with an act of communication, proceeds with communicated negotiation and completes with a communicated agreement on service. Experience worldwide has shown that Information and Communication Technologies (ICTs) have the potential to improve quality of life dramatically by accelerating the rate of economic and social development.

In recent years, major advances in ICTs, combined with the rapid growth of global networks such as the internet, have transformed businesses, markets, learning and knowledge-sharing, empowered individuals and communities with new ways of doing things, and created significant wealth and economic growth in many countries. Access to communications facilities implies that one no longer has to be physically located near urban areas where most information and production is generated. It has completely eliminated the constraint of time and distance.

The points made by the Tyler et al. study about communications in Kenya and the economy bring into sharp relief the sheer incompetence of state control of the telecommunications industry in Kenya in the first 35 years of independence.

According to the World Bank, the Kenyan Government allocated 5% of the country’s GDP to telecommunications – yet, as we have seen, the results in landline provision were minimal.

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The economic cost of this extends far beyond loss of service. Giving the example of newly industrialized countries in Asia such as South Korea and Thailand, the Tyler et al. study outlines how:

Successful export economies need the participation of global corporate leaders to set the pace for quality, technology, productivity, and innovation by implementing global 'best practices.' Their direct investment, though useful, is not as indispensable as their broader role as innovators, pace setters, and conduits for the transfer of technology and 'best practices.' In Kenya, these global companies directly and indirectly support hundreds of smaller companies and tens of thousands of employees. The operating methods of such global companies require extensive use of both voice and data telecommunications, domestically as well as internationally. Experience shows that global companies will focus their management efforts and their investments where adequate telecommunications as well as other preconditions for productive, effective operations permit them to remain globally competitive.

The study also arrived at the following conclusions based on a series of field interviews carried out in June 1991:

- Rural and urban businesses yield economic benefits far in excess of the costs incurred to obtain proper communications.
- Expansion during the 1980s and early 1990s of public telecommunication networks still left gaps of major economic significance
- There would be a large increase in foreign exchange earnings obtainable from improved telecommunications services valuable to Kenya's internationally-focussed economy.

While the importance of telecommunications generally can be easily seen, it is less easy to explain the cell phone's direct and specific impacts on the Kenyan economy. For example it is hard to explain what drove the large number of first-time cell phone line subscribers in Kenya to subscribe to (what were then) expensive cellular services by 2000. In the context of any anticipated growth in the number of landlines operating

at that time this growth was both dramatic and unexpected.

But to some extent the figures speak for themselves. The number of landlines is a drop in the ocean when compared to the population of cell phone subscribers today. Zeitgeist and commercial value have created the demand, and this positive response by large numbers to a new technology can only be taken one way: communications technology supply before the cell phone had fallen far short of the demand.

According to the World Bank, the demand for landlines was as high as 80 potential subscribers for each employee of the state controlled supplier. (See the Bank's concise summation of the ICT sector in Kenya in NOTES and at <http://info.worldbank.org/ict>.)

Competition emerges to benefit consumers

The Kenyan public took to the cell phone in ways that could not have been predicted in times when the landline was the only option. According to The Nation's weekly business insert, Smart Company, Safaricom is the most profitable company in Kenya: its revenues have increased from KSh.1.6 billion in the year 2000 to an astounding KSh.15 billion last year. Smart Company adds: "this is a year-on-year increase of more than 900 percentage points. With Safaricom boasting 3.5 million subscribers and its rival Celtel Kenya two million, the country now has a mobile penetration rate of 17% and this is in less than 5 years. It is estimated that the local mobile phone market has the capacity to grow up to 10 million subscribers, which will account to a penetration rate of around a third of the population."¹⁵

Smart Company quotes Pyramid Research, a consultancy firm, which had predicted in 2001 that, "Kenya's mobile market will continue on a high-growth trajectory and will achieve a penetration level of 3% by 2005, and more than one million subscribers." In January, news wire reports quoted Safaricom CEO Michael Joseph saying his firm was targeting a subscriber base of 5.5 million by the end of next year and suggested they could roll out 3G services for video delivery and other value-added services.

The cell revolution does not stop there. According to Smart Company, Safaricom is about to take on the biggest bank loan a Kenyan company has ever raised. It is reported that at least five banks have formed a syndicate that will provide the country's biggest mobile phone company with a minimum of KSh.10 billion as early as mid-2006. Safaricom needs this money to fund its rapidly growing business, which is now targeting 5.5 million subscribers by the end of 2007. The company's value has also gone up dramatically. "The Kenyan Government owns 60% of Safaricom while Vodafone UK owns 40%. While the Government is the majority shareholder, Vodafone protects its interests by means of pre-emptive rights over the shares. After Vodafone expressed a desire to buy 11% more shares from the Government for US\$100 million, the market price valued Safaricom at US\$1 billion."¹⁶

Safaricom, after posting a pre-tax profit of KSh.8.4 billion on revenues of US\$386 million, is one of the fastest growing firms in Kenya. This growth is so fast that despite Safaricom's healthy cash flow – billions of shillings in subscriptions annually – it cannot keep up with demand for service from new customers without new borrowing to expand its network. As of September 2005, the firm was carrying US\$100 million in long-term debt and US\$171 million in current liabilities.

Celtel Kenya, its other rival in the market, is not far behind. After a lengthy period of loss making, Celtel Kenya has "finally come out of the doldrums to record a surprising US\$28.5 million pre-tax profit for the year ended December 31, 2005." According to Smart Company, this follows a loss of US\$25.7 million in 2004. The year's turnover rose 12%. The company's new turnaround is attributed to emphasis on customer-focused service and an aggressive communications campaign to retain and acquire new subscribers. To this end Celtel rolled out aggressive promotional activities that included an entire re-branding and marketing campaign. "We have been able to turn around this business within 18 months by listening to our customers and efficiently responding to their needs," chief executive Gerhard May says.

In short, what is now being seen in the Kenyan communications market is competition at work with both major players in the market striving to obtain and

retain customers – facing the threat of losses if they fail. This is a far cry from the days of KP&TC when a jacket on a chair was the only visible sign of service for what were undoubtedly many potentially profitable customers in great need.

The importance of competition as a driver for change and growth cannot be under-estimated. Celtel International entered Kenya only two years ago, after buying a 60% stake in KenCell Communications from French telecommunications company Vivendi for US\$250 million. Celtel's entry into the market brought in the expertise and management skills, and the buying power, of its businesses in 14 African countries across the continent.

Initial focus during the transition from KenCell to Celtel was on cost-efficiency. This quickly led to improved results. Then new products came in quick succession in a drive to boost Celtel's market share.

Over a short period, the company launched: "Top Up Chap Chap", in February 2005, "Me2U", allowing airtime transfer from one subscriber to another, "Top up at the Till", "M-banking", a per second billing system, "Switch Ufurahie", and a range of new off-peak tariffs.

The company then reported subscriber base growth of 52% to approximately two million. To service these new customers Celtel both reinvested internally generated cash and took up additional borrowing through a US\$64 million bond. So far it has spent US\$357 million on its network.

The Telkom response to competition

Meanwhile, Telkom has realized how serious the threat of competition from cell phones to its former monopoly of communications in Kenya has become. One example of its response is the rationalization of charges for local fixed-lines. As a result, prices have actually risen at a time when customers continue to migrate to mobile phone networks. However, the fixed-line still remains the phone of choice for doing business. "Tariffs are just one reason why people are migrating to mobile phones and Internet calls" says Telkom's Managing Director, Mr. Sammy Kirui. "In reality, our tariffs for local calls are much cheaper than mobile phone charges. The

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main reason for migration is non-availability of fixed lines.”

In the past, local calls were subsidized by the international calls. The rise in price is a move towards the true cost of making a local call. It also preserves useful international call revenues that can be invested for service improvements.

Telkom has in fact announced plans to “retrench” 12,000 employees and effect further internal changes. A recent article in Smart Company asks: “Is Telkom Kenya finally getting smart?” The piece reads: “A company that spends as much as 45% of its income on salaries can hardly be regarded as a smart company. But Telkom Kenya is not just any company. As the incumbent fixed-line monopoly, it has the backbone for launching high value services that could be the envy of mobile phone companies. Telkom’s sins are well documented, ranging from a bloated workforce to corruption, fraud and a crippling bureaucracy.”¹⁷

Corruption within and without has always been a big problem at Telkom, from top managers embezzling funds to losses due to the illegal tapping of telephone lines. Telkom’s fixed-line connections actually dropped from 311,453 in March 2004 to 281,764 in June 2006, rising again to 286,962 by September. The company’s explanation is that 81,000 “dead” lines were progressively repossessed. Taking control of its network frees up lines to service new demand.

Other changes include renegotiating the rates for interconnection thus reducing cash outlays and reducing the hundreds of billions of shillings lost to fraud which involves practices cutting across the global telecoms industry. A Fraud Management Unit has been established to investigate reports and trigger prosecutions where necessary. Staff found guilty face stiff penalties. Employees have been educated on the company’s fraud and corruption policy. The company’s efforts have been undermined to some extent by the light penalties that fraudsters face when arrested and charged in court. However, the number of reported cases has drastically fallen, a clear sign of progress.

Other savings have been made on power use and the prevention of vandalism and theft, which had been costing the firm up to US\$5.7 million a year. Two years

ago, Telkom began merging and upgrading telephone exchanges as part of efforts to promote efficiency and reduce costs. The digitization of switches for Nairobi and Mombasa are now complete and the benefits have included improved call-completion rates, more customers using pre-paid services and lower maintenance costs.

The payphone business has historically been a good revenue earner for Telekom but over the years has faced new competition from the GSM (wireless) community phones. By replacing old phone booths with new tamper-proof versions, integrated with payphone management systems, fraudulent use and damage is being controlled and enhanced revenue collection realised.¹⁸

The changes being seen in Telkom’s operations are being driven by the presence of competitors in the market for communications services and the freeing of Telkom’s managers to do what they feel is necessary to win new business. The analysis of what has been wrong and the development of ideas to put things right have not needed government action or bureaucratic regulation – the self-interest of the managers and workforce of Telkom is being used to avoid shrinkage of the business as the other cell-phone operators invest and grow.

Internet – are the old mistakes going to be repeated in the future?

The Internet adds value to any fixed line by allowing it to be used for data in addition to voice. Internet on fixed-line is expected to prevail over wireless for the foreseeable future in the local subscriber loop (sometimes called the local access network). While Telkom may use wireless technology in its packeted network backbone, as it is cheaper and easier to set up, access to the network by local subscribers will be by fixed line. Internet services therefore offer Telkom a major opportunity as the incumbent supplier of fixed lines – if it can supply them. In addition, once in place, voice over internet and other value-added broadband services such as broadband television through fixed lines will allow Telkom to move to a profitable monthly usage fee for multiple services.

Telkom has already introduced broadband services through its ADSL product. The take-up of Voice over Internet Protocol (VoIP) services has been good.

Some early benefits in improving fixed line provision were obtained from action by the CCK. In a report released in March 2004 the CCK said Telkom had consistently failed to meet delivery targets for its licensees, and the company was subsequently fined KSh.110 million.

Once again, the presence of Telekom as a monopolist, or near monopolist, may have detrimental effects on consumer services. At present, Telekom appears to be trying to offer a full vertically-integrated Internet service and it has to be asked whether more competition within the supply chain is needed. The company says it is “studying and evaluating models of outsourcing non-core segments.”¹⁹ Managing Director Mr Kiriu says: “Basically we are investing in and venturing into high growth areas. We want a more fluid, lean, fast changing company, able to deliver shareholder value in a tough and highly competitive environment.” These are worthy goals but can they be delivered and what will provide the incentives to do so when competition is missing?

To be fair, Telkom appears to be trying to improve its service to customers. It has recently been computerizing its customer relationship management (CRM) systems to enhance service delivery. It is also retraining CRM staff and setting up its first call centre. The company declares its goal is to be a customer-centric company. Competition from mobile services has clearly had some considerable impact on the “jacket on the chair” culture.

For the consumer – the “better option”

The reality of the new cell phone revolution on the ground is that these new services, properly and reliably delivered, improve Kenyan lives dramatically for the better.

The competitive cell phone market and the economic and social changes it has engendered in Kenya would be unrecognizable to the policy makers and administrators that were responsible for its predecessor, the landline telephone delivered by a monopoly supplier – they

simply could not have conceived of the effects that have been seen. Equally, as consumers, we have become so used to the ubiquitous cell phone that we tend to forget that it has only been with us since the turn of the present millennium and that this change has been extraordinarily rapid.

The following stories illustrate the reality of the revolution on the ground. They tell us where such changes really make their mark, in the lives of individual consumers who use the cell phones daily and those who supply them with those phones. This is where the abstracts of “competitive markets” and “price changes” are made clear – where suppliers and customers meet to exchange their own views freely on the value of what they provide and what they buy. Cell phone suppliers in a competitive market would not succeed if they could not offer what their customers wanted at a price they wanted to pay. These stories show us how suppliers manage to find out what their consumers prefer, and indeed how consumers themselves adjust the value they put on the things they use to improve their lives and thereby provide the opportunities for entrepreneurial suppliers to offer new, carefully priced and useful services.

Service supplier – the engineer installer

Josiah Nzau, a mechanical engineer, has seen the worst of one world and the best of the other. He works for Safaricom and is in charge of antenna installations in Eastern Province. He also works in the Nairobi area when there is much work, which is often. Before Nzau joined Safaricom he worked with Telkom Kenya, starting in 1985, two years after graduating with a Mechanical Engineering degree from Jomo Kenyatta University of Agriculture and Technology. His job was to install telephone lines in institutions and individuals’ residences. When one mentions the Francis Munyua incident, he is not surprised at all: “Part of the problem at Telkom was a culture of non-performance. Many people I worked with did not sit at their desks for even half a day’s work.”²⁰

“I joined Safaricom in 2000 when I saw vacancies advertised for engineers and decided to give it a shot. I wanted to work with new technology and in a new

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environment,” he says. Nzaui says prior to the introduction of the cell phone, Kenya’s telecommunications model was based on the “PTT monopoly” approach traditionally employed in European countries and most of Africa. He adds that telecommunications policy was shaped by what was going on in United States, Japan, Europe, during the late 1980s and 1990s.

He also observes that there are significant early signs of a shift toward a more open and flexible industry structure: specifically, the customer premises equipment (CPE) market opening to competition; the emergence of a variety of special purpose “private networks,” or closed-use groups, operated by business corporations and by non-profit and intergovernmental organizations; and the arrival in Kenya of various international value-added network services (VANs).

Giving the statistics, Nzaui says prior to June 1991, all terminal equipment in Kenya except small PBXs (with less than thirty extensions) had to be bought or rented from KP&TC, which also had a monopoly on CPE installation and maintenance. From June 1991, independent suppliers were allowed to provide CPE and independent contractors to install and maintain CPE and inside wiring, provided that KP&TC approved the type of equipment used, approved and licensed the installation and maintenance contractors, and also conducted a post-installation inspection of privately-installed inside wiring.

“The private marketplace was quick to respond to this relaxation, with several CPE companies advertising in the Kenyan press soon after the mid-1991 announcement, including GEC Plessey Telecommunications, Aztech Electronics (selling Sharp brand equipment), Kenya Microcomputers (selling Sanyo), and Samura Communications (selling Nitsuko),” he says.

Nzaui adds that by 1993, there were only 0.81 DELs per one hundred inhabitants in Kenya, indicating that network expansion still had a long way to go and new technology was needed to speed up advancements. In 1993, there were 426,000 telephone sets connected to the public network in Kenya, yielding a density of about 1.58 telephones per one hundred inhabitants. In 1992,

61% of Kenya’s 126,539 exchange lines were business lines.

Safaricom came into the market with an adaptive antenna technology that allowed it to provide an efficient network based on the i-BURST Personal Broadband System. This offers high-speed reliable network access. Nzaui allows that since Safaricom originated from Telkom it seemed to have borrowed some of its technology. “However, Safaricom remains independent and has invested heavily on technology so as to remain on top.”

To Nzaui, Telkom Kenya operated much more slowly than Safaricom. “In Telkom, purchase of new machines took a while as compared to Safaricom. This also happened with repairs on faulty equipment. I have also observed that it is easier to adapt new technology at Safaricom than in Telkom. No doubt this is because of the revenue that Safaricom ploughs back and the good organisation of the spending of the same. Monitoring and the technical know-how in the engineering sections is strict compared to Telkom. For example, it will take Safaricom hours to fix a broken machine but in Telkom it can be days, weeks or sometimes months depending on the nature of the damage.”

Nzaui also feels planning is taken more seriously – especially in judging how it is implemented – at Safaricom than it was at Telkom. “Strategic plans are always drawn after a period of time at Safaricom. This enables the company to set goals and accomplish them. Safaricom has a speedy coverage plan. The competition that exists in the market makes the company stay on its toes as far as adoption of new technology is concerned.”²¹ He adds that with the increasing numbers of users, the communication industry, especially in cell phones at large, is a force to reckon with economically. “Cell phones in particular have changed the communication culture of many people. The gadget was once considered for the rich businessmen and tourists and is now affordable to everyone. Today, in major towns, three out of five people have cell phones.”

Even as an insider and expert, Nzaui is surprised at the technological advancement. “It is surprising how fast technology is changing. From this trend, more is expected and older cell phones will continue to get

cheaper as people crave the latest technologies. We have begun to see very small cell phones, which can do marvelous things. They have all sorts of features: cameras, recorders, video capturing devices, Internet communication ports, banking facilities etc. In twenty years, I can foresee the current phones being passé as we move on to smaller and more comprehensive ones.” Changing technology has made personnel at Safaricom dynamic because new technology has meant new staff or retraining of an already existing staff.

“New technology makes things run faster, boosts the image and the performance of companies.” Competition is important since the dynamism of the cell phone companies brings about rapid innovation and improved service. “Of course Safaricom would want to compete in network coverage and convincing clients that it is the better option. The range of services provided by the company also keeps it a notch ahead of other companies,” Nzai says.

Service consumer – the matatu owner

Mr. Mica Mbugua, 72, has been in the matatu business for 22 years now (matatus are entrepreneur-run minibuses for public transport). Today, he owns a fleet of 18 matatus plying their trade on various Nairobi routes. Mbugua bought his first phone in 1998 for US\$1,360 and a Sim card for US\$100. Unlike Francis, his business colleagues influenced him to buy a cell phone. “It was my Indian business friends who challenged me to have one for effective communication in business,” he says.²²

Mbugua says that back in 1999, the cell phone was not only for communication, it was a status symbol. “They lacked many of the features that today’s phones have. In those days, I would only use it to make or to receive a call,” he says. He was not even able to use the basic text messaging (SMS) although he does not remember whether it was because he was unable to use it or there were no such features on the phone.

The cell phone could only be used in the Nairobi CBD and select areas. Not all locations in town had network signal. He adds that network signal would sometime be problematic when one was in a building or in a vehicle. He subscribed to Safaricom, which had begun offering

mobile telephony services in Kenya in 1997 as a fully-owned subsidiary of Telkom Kenya. Like Francis he confirms that the cell phone transformed the way he made business deals with his colleagues. He would make deals and call for meetings through the phone. He could not, however, communicate directly with his business agents using the mobile phone because they didn’t own one. He began realizing the benefits of his cell phone in business three years later when all his business managers and matatu drivers bought phones. Before then, calls were expensive to make. Often, conversation would be cut off because of unreliable network signal. There was also no warning in those early phones that one’s prepaid airtime had run out.

Today, Mbugua owns a Samsung phone that he bought for US\$930. He marvels at what the phone can do today compared to six years ago. For example, he can top up his phone from his bank account without physical currency. He appreciates the fact that the network has improved tremendously. He says that over 65% of communication with his distant family members and friends are via cell phone as compared to none before. Safaricom has been able to keep pace with the global mobile telecommunication scenario by having strategic business associations and Mbugua presently uses his telephone to make international calls, especially to follow up on his new flower export business near Naivasha town.

On the matatu business, Mbugua receives two or three briefings from his managers and financial assistant. “I am kept informed throughout.” The cell phone is especially helpful in troubleshooting and he is informed immediately in case of road accidents or problems with the law. Immediately there is a problem with the police he can coordinate responses with his lawyer if necessary. “I basically reach all my people via the phone: my doctor, insurance agents, brokers...”

Even when buying a new matatu, his transactions are carried out on his cell phone. Most times he only gets to see his new vehicle when it comes to Nairobi. He also makes specifications of what he wants including spare parts via the phone. “If the vehicle breaks down even at midnight I have to make sure that it is fixed and on the road by morning and this is only possible through a cell phone. This cell phone has certainly been a factor in my

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business growth. Things go faster nowadays – communication is efficient and quick,” he says.

Before the advent of cell phones, Mbugua would use landlines and bureau services to make deals and transactions. He also used telegraphs and letters. He had to learn how to use the Internet just before cell phones came onto the market. He admits that he rarely uses the Internet today. “I don’t get time to browse, with a cell phone you can call from anywhere – you don’t need a cyber café or to sit behind a computer”

Service supplier – the cell phone retailer

Five years ago, competition in cell phone sales among sellers was low because many vendors had fixed prices for the phones. Today, cell phone vendors have found ways of increasing sales by varying prices. When cell phones were introduced their prices were high and barely partial to the competitive impetus downward. “Vendors had to style up and secure a place in the competitive market,” says Thige Mwai of Cheche Communications situated at Kimathi Street. Mwai sells phones and also offers repair services. Over the years Mwai has observed that customers ask for particular models.²³

Current trends favour cell phone models with readily available accessories like Nokia and Samsung which sell the most. Price is also a determinant. According to Mwai the middle class often purchases mid-range phones. The cheapest phone Mwai has in stock is an NEC model for US\$42 and the priciest is a Samsung model for US\$500. Younger people tend to be fashionable and go for the latest models, which have features such as cameras or even the Internet. Cheap phones become quickly obsolete, though they are the ones favoured by a more conservative older generation who prefer cheaper phones for security reasons. “Who would want to steal a phone worth only US\$29?” is a constant refrain Mwai hears from older customers.

Service consumer – the food vendor

Mama Kim Atieno runs a small “food joint” on Ngong Road called the Executive Canteen. She has been in the business for more than five years now. After she bought

a cell phone, Mama Atieno stopped travelling to Kisumu every weekend to buy fish. Her business has since experienced growth because of effective communication, which has done more than cut down on expenses.²⁴

Travelling alone would cost her up to KSh.3,000, and on meeting business agents she would spend another KSh.5,500 to ensure that her supplies would arrive to Nairobi without a problem. Today, Mama Atieno spends only, KSh.4,000 a week for the same arrangements, which is less than half her earlier expenses, and this includes airtime on her phone.

“I just call them (suppliers/agents) and strike deals,” she says. She can now order supplies through the phone for fish. Her customers can also call her and place their orders. She wonders how she managed four years ago. “I order fish direct from Kisumu and receive it the same day. I am in touch with suppliers and their agents almost daily while before I could only meet them on weekends.”

Before the advent of the cell phone, Executive Canteen made between 20% and 35% profit of sales. Today, the business makes between 47% and 60% profit depending on the season, when nearby colleges are in session. Her cell phone has enabled her to employ three more members of staff within the last eight months. As the business grows she is even now worried about the space in which she operates. “It seems to be getting smaller and smaller which means my business is growing.”

Service consumer – the multi-talented plumber and electrician

Many like Mama Atieno in the informal sector have greatly benefited from cell phones. It has become the most essential tool for Meme Mwachofi, a Kenyan plumber, electrician and small businessman who, like so many others in Kenya, makes a living from various different jobs at the same time. Thanks to the explosion of growth in the mobile phone industry in Kenya over the past five years, Mwachofi says his plumbing-electrical business has grown by about 50%.²⁵

He also operates a community payphone via the mobile network and further cashes in on the boom by charging cell phone batteries for a fee. “Mobile phones have

helped me very much,” Mwachofi says. “Sometimes I receive as many as five calls a day for different jobs. Were it not for mobile phones, jobs would have been very minimal. With the phone, I am well known.” His phone number goes around by word-of-mouth from satisfied customers.

He is among thousands of Kenyans, many of them poor, who have taken advantage of the phenomenal mobile expansion to ease the way small businesses operate. Painters and masons now advertise their numbers on trees by the roadsides in Nairobi. In the past, they would have sat outside hardware shops looking for work from people who have just bought nails, cement and other building supplies.

Service consumer – the college student

Cell phones have also transformed student life. Cell phone companies have heavily targeted the young as a great market for their products. As with most new technologies, the cell phone’s core market is people between the ages of 24 and 40.

College students in Kenya embrace new cell-phones that hit the market and they often buy the latest, most expensive phones. Mercy Atieno, 24, says she convinced her boyfriend to buy her the phone she wanted – a Nokia phone worth US\$650 back in 2003. At the time she owned a Sagem 2300 which she had bought herself at US\$80.²⁶ “My new phone is prestigious and makes me feel the same.” She mainly uses her phone to talk to her friends. The phone has a camera and has voice-recording software, which she always plans to use for schoolwork but that doesn’t ever happen. “When I try I find myself sending text messages to friends instead.”

She admits the phone can be distracting especially when incoming calls happen during a lecture. She finds it difficult to switch it off or put it into silent mode. “I rush outside the lecture hall to take calls when this happens.” Her cell phone is also an important tool in her relationship with her boyfriend: “It certainly makes him easier to reach”. She tells of instances where students have been caught using cell phones to cheat in exams by saving information in shorthand and trying to access it in the exam room.

Mutua Kakai, 24, also a university student uses his phone for business. He sells “airtime” to his colleagues, a business that he has been in for two years. “I get someone in town to top me up with 3,000 for the day and all I do is sambaza (send phone credit to other cell phone users via SMS) my clients all day.’ This way he makes some pocket money. Kakai has however had to learn to discipline himself not to use airtime meant for business for his own use. That way, he can account for the cash flow of his business.

Conclusions

Towards the end of our research for this paper, one of us (June) interviewed her hairdresser in Nairobi, as they spent 10 hours together getting her hair braided. Judith Achieng moved to Nairobi from a rural village where she had no prospects for an education or acquiring any skills that would land her a decently paying job. She had learnt how to braid hair since childhood and with this skill she moved to try and change her fortunes in Nairobi.

Like many young women her age who go into the business, she had no money to rent premises at which to offer the service. She had to go to an established salon owned by someone else and be employed among several other girls, most with the same background. The pay was low and the boss was harsh. The girls were poor with few if any options and were in no position to negotiate better working conditions with their employers.

Judith says cell phones have radically changed the lives of all hair braiders, because they have become the bargaining chip to use against their employers. It is easy for a customer to get the girl’s cell phone number and call her to the customer’s home for the braiding. The girl can then charge less than the salon would as there are no overhead costs and the employer would never know. Eventually some girls have gone freelance, making more money than they used to and enjoying a new found freedom, confidence and self esteem that they could never have imagined five years ago. Those that stay in employment are by necessity treated better by their employers because they could leave at anytime and set up shop, thanks to their cell phones. The cell phone has

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changed the social status of the hair braider, changed their station in life, by breaking the monopoly of the salon owner over the customer.

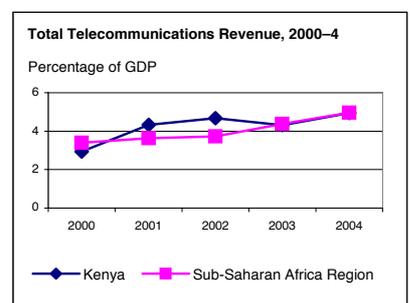
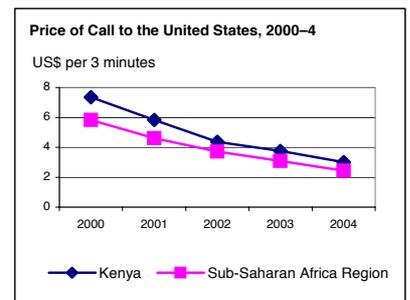
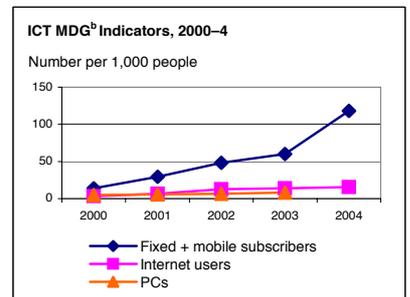
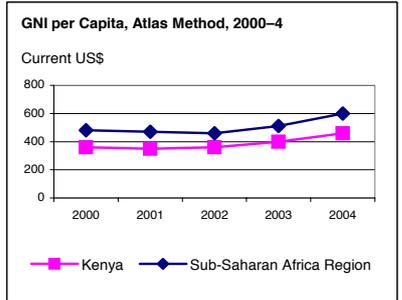
The demand for electricity, water and several other factors of production outstrip their supply in countries like Kenya, shortages that ultimately manifest themselves in poverty. The cell phone revolution in Kenya is evidence that, contrary to popular belief, when allowed, and given incentives, the capital and expertise to service this demand is available from within these countries and around the globe.

The human mind in an open market is a wealth creation machine. Myriad entrepreneurs in Kenya are trying constantly to invent new ways of moving the right products to the right customer at the right time and always by the most efficient means possible. Business could grow rapidly, and would operate more efficiently and solve more problems, if this revolution could be repeated in every sector of the Kenyan economy.

Appendix 1

Kenya ICT at a glance (World Bank)

	Kenya		Low-income group	Sub-Saharan Africa Region
	2000	2004	2004	2004
Economic and social context				
Population, total (millions)	30	32	2,338	719
Urban population (% of total population)	36	40	31	37
Poverty (% of population below US\$1 per day)	22.8	..	..	46.4
GNI per capita, Atlas method (current US\$)	360	460	510	600
GDP growth, 1995–2000 and 2000–4 (%)	1.7	1.5	5.4	3.9
Adult literacy rate (% ages 15 and over)	74	..	61	59
Primary, secondary, tertiary school enrollment (% gross)	53	52	55	52
ICT sector structure				
Separate telecommunications regulator	Yes	Yes		
Status of main fixed-line operator	<i>Public</i>	Public		
Level of competition: international long distance	<i>M</i>	P		
Level of competition: mobile	<i>P</i>	P		
Level of competition: Internet service provider	<i>C</i>	C		
Government prioritization of ICT (scale 1-7)	..	4.0	..	4.4
ICT sector performance				
<i>Access</i>				
Telephone main lines (per 1,000 people)	10	10	33	17
International voice traffic (minutes per person) ^a	3	2	4	..
Mobile subscribers (per 1,000 people)	4	108	48	86
Population covered by mobile telephony (%)	..	..	43	..
Internet users (per 1,000 people)	3	15	20	15
Personal computers (per 1,000 people)	5	8	8	12
Households with television (%)	15	19	16	15
<i>Quality</i>				
Telephone faults (per 100 main lines per year)	220.9	149.0	..	..
Broadband subscribers (per 1,000 people)	0.0	0.0	0.5	0.1
International Internet bandwidth (bits per person)	0	2	3	4
<i>Affordability</i>				
Price basket for fixed line (US\$ per month, residential)	6.6	12.5	6.6	8.5
Price basket for mobile (US\$ per month)	..	14.0	11.6	13.5
Price basket for Internet (US\$ per month)	..	45.7	45.5	54.8
Price of call to United States (US\$ per 3 minutes)	7.35	3.00	1.95	2.43
<i>Institutional efficiency and sustainability</i>				
Total telecommunications revenue (% of GDP)	2.9	4.9	2.3	5.0
Total telephone subscribers per employee	21	80	89	144
Total telecommunications investment (% of revenue)	17.0	7.8	27.8	27.8
<i>ICT applications</i>				
ICT expenditure (% of GDP)	3.5	3.1	4.1	..
E-government readiness index (scale 0-1)	..	0.14	0.12	0.11
Secure Internet servers (per 1 million people)	0.0	0.2	0.3	1.9
Schools connected to the Internet (%)	..	..	..	..



Notes: Figures in italics are for years other than those specified. .. indicates data are not available. C = competition; GDP = gross domestic product; GNI = gross national income; ICT = information and communication technology; M = monopoly; MDG = Millennium Development Goal; P = partial competition; and PCs = personal computers.

a. Outgoing and incoming. b. Millennium Development Goal indicators 47, 48a, and 48b.

Sources: Economic and social context: UNDP and World Bank; ICT sector structure: ITU, WEF; ICT sector performance: Global Insight/WITSA, ITU, Netcraft, UNDESA, UNPAN, and World Bank. Produced by the Global Information and Communication Technologies Department and the Development Economics Data Group. For complete information, see Definitions and Data Sources.

Appendix 2

The cell phone providers

Safaricom

Source: <http://www.safaricom.co.ke>

“Safaricom Limited is Kenya’s current leading Mobile Telephone Operator. It was formed in 1997 as a fully owned subsidiary of Telkom Kenya. In May 2000, Vodafone group Plc, the world’s largest telecommunication company, acquired a 40% stake and management responsibility for the company, Safaricom’s aim is to remain the leading Mobile Network Operator in Kenya. In the modern world of globalization, Safaricom has been able to keep pace with the global mobile telecommunication scenario by having strategic business associations; associations which add value to the global mobile telecommunication initiative and which help in meeting the dynamic challenges of the modern mobile telecommunication world. Safaricom’s strategic association with the world leaders in mobile telephony has created a niche in the Kenyan market today.

“Linksoft, PAV’s Kenyan-based partner with offices in Nairobi, and a team of fully trained FSO engineers, were keen to build on their quality reputation with Safaricom. A comprehensive survey of the proven FSO technologies resulted in Linksoft choosing the PAV technology. Working with Safaricom and PAV, Linksoft were able to demonstrate the capability and reliability of the PAV technology. Building reliable network coverage throughout the provinces to offer the network capacity demanded from an ever growing customer base is a key part of Safaricom’s success. PAV are proud that through their partnership with Linksoft the PAV technology has proved to be a reliable and consistent element within the Safaricom network.”

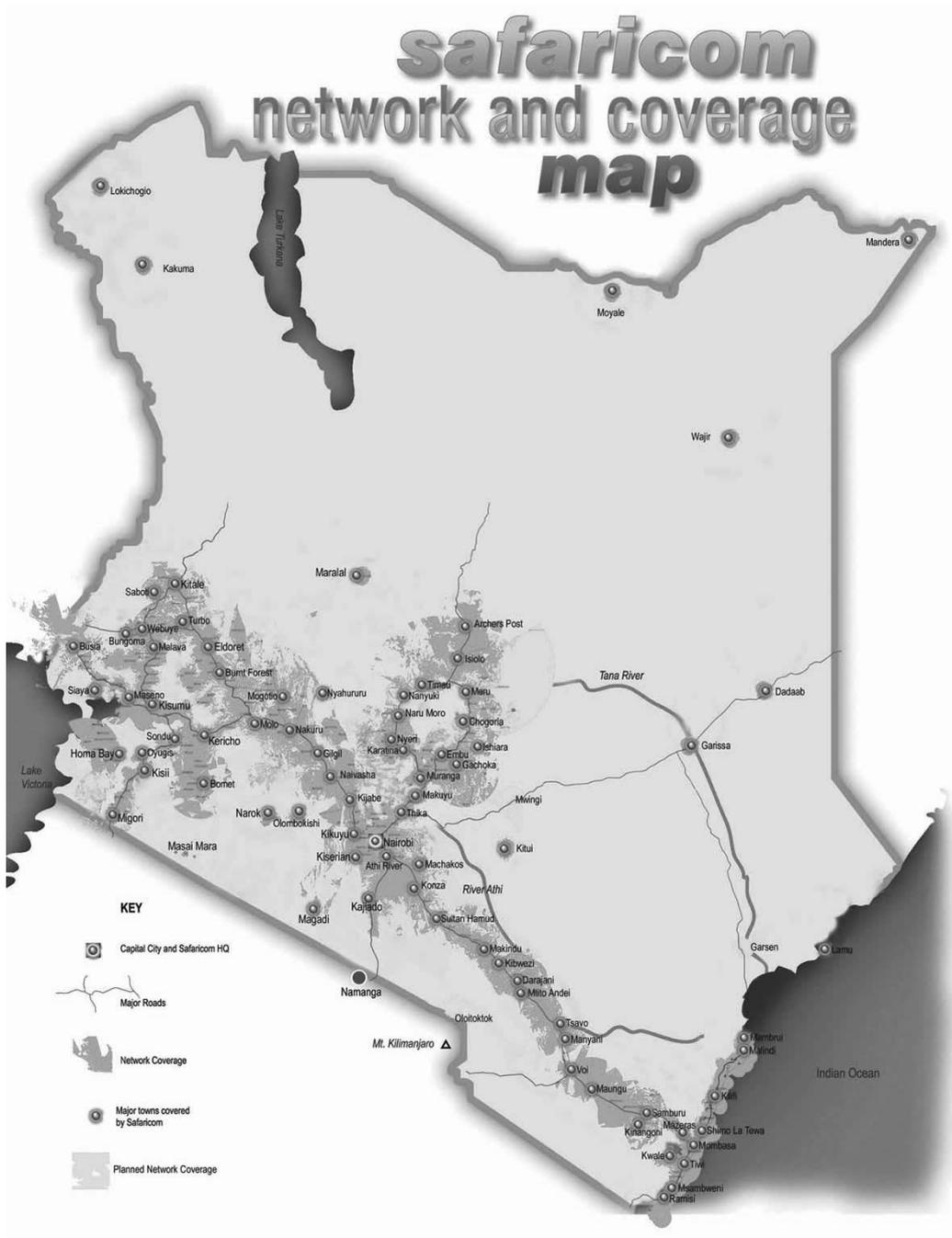
Celtel

Source: www.ke.celtel.com

Founded as KenCell Communications Ltd after the liberalization of the Telecommunications Industry in Kenya, Celtel International is a fully private GSM operator and was awarded the second GSM licence to operate a GSM Network in Kenya by the Communications Commission of Kenya, CCK.

“Clarity, Simplicity, Assurance and Understanding, are the guiding principles by which KenCell commits to providing its customers with innovative, flexible and customer-orientated services. With these guiding principles in mind KenCell selected PAV Free Space Optics technology to further expand the network infrastructure and provide bandwidth where it was needed quickly and cost effectively. Providing E1 connectivity, which is reliable and effective, was essential for KenCell in order that PAV’s innovative technology guaranteed a quality connection to one of Kenya’s most reliable and fastest growing GSM networks.

PAV’s partner Eurotech, with offices in the UK and Kenya, first approached PAV in 2001 with a request to trial FSO equipment as a potential solution for KenCell’s E1 backhaul connectivity. Following a comprehensive and simple training program then Eurotech’ engineers were able to successfully install and commission the FSO links within KenCell’s network. From here the reliability and availability of the equipment underwent thorough and rigorous testing in differing climates and terrains; the PAV equipment passed these tests with flying colours. So much so that there are now over 50 links installed within the KenCell network.”



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Interviews

Mama Kim Atieno, Businesswoman, Ngong Road
Interviewed on 15 Mar. 2006

Thige Mwai, Cell Phone Vendor, Cheche
Communications Nairobi
Interviewed on 15 Mar. 2006

College Students
Interviewed on 17 Mar. 2006

Josiah Nzau, Engineer, Safaricom
Interviewed on 15 Mar. 2006

Mr. Mica Mbugua, Matatu Businessman
Interviewed on 17 Mar. 2006

Glossary review

Kariobangi – Populous low-income suburb to the East of Nairobi.

Watchman – Security guard

Ronald Ngala – Downtown Street in the Central Business District of Nairobi

Daily Nation – Kenyan daily newspaper with the largest circulation

Jomo Kenyatta University of Agriculture and Technology
– Leading university in the study of technology in Kenya.

Time-line of communications history in Kenya²⁷

1888 – Kenya’s earliest telecommunications, submarine cables linking Zanzibar, Mombasa, and Dar es Salaam, are laid by the Eastern & South African Telegraph Company.

1896 – Construction of a telegraph network begins with a 200-mile coastal line linking the port city of Mombasa with Lamu. Extends into the interior of the country in conjunction with the building of the railway system, forming a dual “backbone” for Kenya’s communications infrastructure.

1908 – Public telephone network begins service in Nairobi, the capital, and in Mombasa. Eighteen telephone subscribers are connected in Nairobi.

1920s-1930s – the British colonial administrations in Kenya and Uganda, and the British-administered League of Nations administration of Tanganyika, became more and more closely linked.

1933 – The postal and telegraph services of the three countries is fully amalgamated with a single postmaster general responsible for all three postal and telecommunications services. In varying forms, the joint operation of posts and telecommunications for the three countries continues

1960s-Early 1970s – it was widely believed that the advantages of a large-scale common infrastructure and economic union would be reconciled with national sovereignty through an East African Community (EAC) broadly analogous to the European Community.

Late 1970s – Desire to maintain East African Posts and Telecommunications Corporation (EAP&TC) as a “going concern” in direct contradiction with the political realities of the three participating countries, which had divergent political orientations and development strategies.

1977 – The EAC collapses and a separate Kenya Posts &

Telecommunications Corporation is established. Certain collaborative training arrangements are the only major parts of the old three-country collaborative facilities that remain.

1980s – With the collapse of EAP&TC, the growth of Kenya’s network occurs on a larger scale.

1979–1983 – KP&TC undertakes three telecommunications development programs: the First Program starts running. The First Program called for the addition of 58,800 exchange lines of capacity, a 60% increase over the system capacity available at the end of 1979. It also called for the provision of public telephones in two hundred previously un-served locations, urban and rural. Although the ambitious targets were by no means fully met, substantial growth was achieved. The number of working DELs rose from 69,996 at the end of 1979 to 95,000 at the end of 1983.

1984 – 1988 the Second Program is run over the period. The Second Program stressed the expansion of service in Kenya’s rural areas, with the emphasis on “District Focus” – installation of new digital switches in nine locations to ensure that all forty-one “District Headquarters” locations in Kenya had automatic telephone service. This goal was achieved in 1988.

1985–1986 – World Bank funding for the Third Program is negotiated. The Third Program largely continued the approach established by the first two but included two significant innovations: extensive replacement of small manual exchanges in rural areas with digital switching equipment and the introduction of optical fibre transmission for the links (known as “junctions”) connecting nearby exchanges.

1987 – Disbursements for the program begin in 1987.

1992 – Completion of Third Program is achieved.

Notes

- 1 Francis Munyua, recorded interview, 13/3/2006
- 2 Mungiki is a local religious sect that periodically engages in illegal and violent actions to raise revenue.
- 3 Nderitu, 2006:
- 4 Kisero, The East African Online:
- 5 George Kamau, phone interview, 14/3/2006
- 6 Kisero, The East African Online:
- 7 Opiyo, 6 March 2005:
- 8 *ibid.*
- 9 Francis Munyua, recorded interview, 13/3/2006
- 10 Tyler: <http://www.vii.org/papers/tyler.htm>
- 11 *ibid.*
- 12 Daily Nation, Smart Company, 2006
- 13 Nderitu, 2006:
- 14 Martin Cooper is now chairman, CEO, and co-founder of ArrayComm Inc and made the comment when after he placed the first public telephone call on a portable cellular phone over 30 years ago on April 3, 1973. It was the incarnation of his vision for personal wireless communications, distinct from cellular car phones. That first call, placed to Cooper's rival at AT&T's Bell Labs from the streets of New York City, caused a fundamental technology and communications market shift toward the person and away from the place.
- 15 Daily Nation's Smart Company,
- 16 Daily Nation, Smart Company, 2006
- 17 Daily Nation, Smart Company, 2006
- 18 Daily Nation, Smart Company,
- 19 *Ibid.*
- 20 Joseph Nzau, recorded interview 15/03/2006
- 21 Joseph Nzau, recorded interview 15/03/2006
- 22 Mica Mbugua, recorded interview, 17/03/2006
- 23 Thige Mwai, recorded interview, 21/03/2006
- 24 Mama Kim Atieno, recorded interview 15/3/2006
- 25 Meme Mwachofi, recorded interview 20/0/2006
- 26 Mercy Atieno, recorded interview, 17/03/2006
- 27 Michael Tyler, Janice Hughes, and Helena Renfrew, Telecommunications in Kenya: Facing the Challenges of an Open Economy

The Cell Phone Revolution in Kenya

by June Arunga and Billy Kahora

The cell phone revolution in Kenya is an outstanding example of a market at work, not just providing a new product but creating wealth with that tool.

The state had failed dismally in the provision of telecommunications and its monopoly bred fraud, corruption and indolence: telephone lines were difficult to obtain and then were expensive, unreliable and poorly maintained.

The cell phone phenomenon burst onto the scene around the turn of the 21st century. The new private players in the market did not really know what customers would want, what price they would pay or what benefits they would gain from a cell phone. They soon found out.

This study shows how lone entrepreneurs and small businesses benefited hugely from this private market solution, illustrating the effects of competition and the freedom to trade. Cell phones allowed businesses to make savings as well as to gain access to more customers and to new services.

This is not just a study of new technology but of how markets work, how they benefit the poor most and how quickly they take effect. Kenya's telecommunications revolution shows that this is as true for poor countries as anywhere else.