

The Transformation of East Africa's Economy Using Mobile Phone Money Services: A Pragmatist Account of ICT Use.

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Abstract

A pragmatic approach is employed to account for the unique responses to the Mobile Money Transfer Services in four of the five East African Countries; Kenya, Uganda, Tanzania, and Rwanda that are forging a regional common market ahead of a political federation by 2015. While different outcomes to the introduction of Mobile money transfer services are highlighted in the narratives on each country, similarities that are typical of developing countries with their populations struggling to cope with the various uses of new information and communication technologies (ICTs) are also underlined. The paper underscores the radical transformation the Mobile Money Transfer Services is having on the social and economic lives of the people of East Africa especially in the rural areas where formal banking services have been absent. The paper notes that the cut throat competition among the telecom companies to fill the banking void in the rural areas of the prospective East African Community, and to tap into the lucrative international business of foreign currency remittance by East African citizens in the Diaspora, local populations have become the unintended beneficiaries from the ICT innovations.

East-Africa, Pragmatist Approach, Money Transfer, Mobile Phone, ICT

1. INTRODUCTION

The introduction and proliferation of Mobile Phone Services in the East-African region is steeped in a long and well established history of money transfers by immigrant workers (Cerstin & Maimbo, 2005 [1]). During colonial times, many family breadwinners in rural areas migrated to urban areas in search of greener pastures to be able pay colonial taxes. They also had to find means of sending money back to their loved ones left behind in the countryside. Since that time, scores of East-Africans have continued to flock destinations within Africa (e.g., South Africa) but especially to the West in search of better economic opportunities. These fortune seekers have had to seek money transfer services to enable the sharing of their spoils with loved ones back home. For example, Cerstin and Maimbo indicate that "Kyeyo" is a popular local term in Uganda that refers to this migrant practice of sending back home to one's family for their welfare. Until recently, the choices that these

migrant workers and others had for conducting these money transfers precluded services via mobile phones. In fact, the rather swift adoption of money transfer services in several African countries including those in the prospective East African Community has defied predictions by scholars (e.g., Cerstin & Maimbo) who anticipated a lukewarm response to this innovation on the part of African governments because they tend to be quite "conservative" on such matters.

While five East African countries recently signed a Common Market Treaty (CMT) that will facilitate the free movement of people, goods, and services by July 2010, the use of mobile phone services in money transactions across the region to boost trade and enhance the establishment of the common market have not been systematically examined. Several leading telecommunication providers in four of the five countries of East Africa; Uganda, Kenya, Tanzania, Rwanda, have, since 2008, entered into partnerships with major banks and sometimes are going it alone to avail mobile money transfers services in these countries. The money transactions are undertaken within their respective country's borders, in the East African region, and overseas where many of the countries' elites live and work. In rural East Africa, where the formal banking sector had previously not ventured, the money transfer services are transforming the economic and social lives of populations in quite a significant way.

However, there are varying patterns of use and degrees of success associated with the Information and Communication (ICT) experiences of these organizations and their clients in each of the five countries. Therefore, the overarching question addressed by this study is, why use of the same ICT platform; the mobile phone for the same function achieve different levels of success. This will help enhance some understanding of the unique macro-social and cultural environments that surround the implementation of the new technological innovation in each of the four East African member countries seeking to integrate their economies ahead of the political federation in 2015. This study takes a pragmatist approach that posits a necessity for using multiple theories to account for the similarities and differences found in the ICT experiences across these countries. Therefore, the study explores the relevance of selected aspects of five theories of ICT use in informing and explaining the similarities and variations in these experiences: the media

richness model, the social information processing model, the dual-capacity model, and stakeholder theory, and diffusion of innovations theory. First, a narrative including highlights of the mobile money transfer services experience in each East-African country as reported in various newspapers and some scholarly sources is presented. Then discussion of these highlights using selected aspects of the five theories ensues.

THE EAST-AFRICAN SAGA OF MOBILE PHONE MONEY TRANSFER SERVICES

Kenya

The mobile money transfer services were first launched in Kenya, East Africa's largest economy, by Safaricom, an affiliate of the United Kingdom-based Vodafone group Plc, the world's largest telecommunication company in March 2007 (Safaricom, 2007 [2]; Hughes & Lonie, 2007 [3]). The mobile money transfer service was code-named M-PESA--M representing mobile while Pesa is a Swahili word for money (Safaricom, 2007, 2008 [4]). The service was developed by Sagentia, a UK firm, before the operation was outsourced to IBM in September 2009 (British Broadcasting Corporation, 2008 [5]; Adero, 2009 [6]).

According to Safaricom (2007), the M-Pesa service affords their Kenyan mobile phone subscribers to transfer money fast, safely and affordably deposit and withdraw money from a network of agents that includes airtime resellers and retail outlets acting as banking agents across the country. In a country where banking services are the privilege of urbanites, the growth of M-PESA service was spectacular; it quickly captured a significant market share for digital cash transfers; notching a 6.7 million subscriber base by the end of 2009 with 2 million daily transactions totaling 152 billion shillings in less than two years (Adero, 2009). Adero observes that M-Pesa, an acclaimed global first, continues to register steady growth with more than 10,000 new users signing up daily.

M-PESA is a branchless banking service that is designed to enable users to complete basic banking transactions without the need to visit a bank. A customer can send money to another mobile phone user, withdraw cash, buy airtime for him/herself or another prepaid subscriber, pay bills and make loan repayments (Mwakugu, 2008 [7]; Ivatury & Mas, 2008 [8]). The authors add that an M-PESA enabled mobile phone can also function as an electronic wallet and can hold up to 50,000 Kenyan shillings.

Safaricom uses a SIM toolkit to provide its subscribers handset menus to access the M-Pesa service using software developed and donated by Microsoft Incorporated through its philanthropic affiliate; Bill & Melinda Gates Foundation (Vodafone UK/Global, 2007 [9]). With a customer base of 13 million subscribers in Kenya, Safaricom Kenya Ltd. is now the leading mobile network operator in East Africa. Founded in 1997, two years after Celtel Uganda was launched in 1995, Safaricom plunged, in 2009, into the lucrative international money transfer in the UK through its M-Pesa service to tap into the burgeoning remittance flows of hard currencies from Kenyans in the Diaspora to their families back home (Mwakugu, 2008; Adero, 2009).

Mwakugu and Adero state that recent surveys in Kenya indicate that 52 percent of all money transfers were being conducted

through M-Pesa. A substantial majority of the people surveyed (93%) were enamored by the system because it offered them convenience, security, speed, and had removed so many bottlenecks such as the limit to amounts one could send or receive. In recognition of the impact of the innovative IT solutions for sustainable urbanization demonstrated through the M-PESA service, the United Nations Human Settlements Program (UN-HABITAT awarded Safaricom a global Habitat Business Award last year (Adero, 2009).

However, the phenomenal growth of the M-Pesa service was not taken lightly by the formal banking institutions who viewed it as a real threat to their monopoly and before the end of 2008; they successfully lobbied the Kenyan government to audit the activities of the new venture to purposefully derail their national outreach, appeal, and popularity (Mwakugu, 2008; Adero, 2009). However, according to Adero and Mwakugu, the maneuver flopped because the M-Pesa audit found the service not only robust but also transformative of the economic and social lives of rural Kenyans.

But the monopoly of mobile money transfer through M-Pesa by Safaricom was soon challenged by the entry of Zain Telecoms, a Middle East based company that took over Celtel networks in 24 African countries including Uganda, Kenya, and Tanzania in 2006 (Kisambira, 2008 [10]; Zain, 2009 [11]). With a new Zain brand and a huge capital injection, Zain Kenya also launched the mobile money transfer services in 2009. Operating in the three of the five East African Community countries; Kenya, Uganda, and Tanzania under the ZAP Money transfer service, Zain has since announced a partnership with Western Union, an international money transfer agency to tap into the most lucrative foreign remittance business of hard currencies from Kenyans in the Diaspora to their families back home (Zain, 2009).

Other competitors to the M-Pesa service include Orange Wireless of France, which will launch its Orange Money transfer service this year in Kenya and Uganda simultaneously following their acquisition of HITS Telecoms of Uganda (Bohnstedt, 2008 [12]). Bohnstedt adds that the competitor Econet, in cooperation with India's Essar is due to roll out its mobile money transfer services in Kenya and Uganda later this year.

Sector analysts have welcomed the competition observing that in all this scramble to fill the banking void in rural East Africa, the subscriber, and ultimately the rural economy in the region, will be the greatest beneficiaries. Money transfer charges will drop, the entire region will be covered, security of money transfer assured, highway robbers will be eliminated, and economic transformation will move closer to becoming reality; and indeed the change for the better is already here (Bohnstedt, 2008; British Broadcasting Corporation, 2009 [3]).

Uganda

A pioneer of the mobile money transfer services in Uganda, MTN Uganda, with its roots in South Africa, was opened in the country in 1998, three years after the launch of the first ever mobile phone service provider in East Africa, Celtel Uganda, in 1995. Celtel has since 2006, re-branded as Zain (Kisambira, 2008). However, despite Zain's first footprints in the country, MTN Uganda, pioneered the Mobile money transfer services that were launched in March 2009 (Mugabe, 2009 [14]), two

years behind its counterpart, Safaricom of Kenya, which launched M-Pesa service in 2007 (Safaricom, 2007; Hughes & Lonie, 2007).

After only three months, the MTN mobile money transfer service had moved over 5 billion shillings in about 180,000 transactions since its launch and had so far built a customer base of over 40,000 that mostly conducts businesses upcountry (Mugabe, 2009). In a country where less than 20% of the entire population is involved in the formal banking sector, the over 7000 MTN mobile money outlets countrywide found a huge banking void to fill, according to Richard Mwami, the MTN head of mobile money, who also indicated to the media that the subscriber numbers for the service were steadily growing (Mugabe, 2009).

MTN Money provides a fast, affordable and convenient way to send money to any mobile phone anywhere in Uganda by all subscribers to the MTN network. According to MTN Uganda (2009 [15]), to activate the MTN MOBILE MONEY, a subscriber has to upgrade the MTN sim card to one that is Mobile Money enabled at any MTN Service Centre or authorized Mobile Money agent for free registration for a subscriber to open a Mobile Money account without a fixed minimum amount of money (MTN Uganda, 2009). All MTN Mobile Money Agents are registered limited companies and process cash payments for registered and non registered customers and deposit cash into registered customers accounts (MTN Uganda, 2009).

But the service has not been without far-reaching challenges to MTN. According to Mugabe, MTN Uganda faced technical problems that were manifested through a sagging network under a fast-growing subscriber base which greatly affected the quality of its services during the initial stages of the launch. According to MTN Uganda, the challenges necessitated a fresh investment to drastically upgrade the network (MTN Uganda, 2009).

Although it was the first to set up shop in Uganda, Celtel Uganda, now Zain, launched its money service months after MTN Uganda. Zain, the company that took over Celtel Uganda in 2006, launched a mobile money transfer service dubbed ZAP (Baguma, 2009; Nakaweesi, 2009 [16]). The ZAP money transfer service relieved Zain customers of the hassle of moving with huge sums of money because the ZAP service will enable Zain subscribers to use their phone handsets to transfer money, pay their bills, top up airtime and buy goods without physically using cash.

According to Baguma and Nakaweesi, the service provides customers with increased security and flexibility, thereby reducing the need to carry cash and ensuring security and elimination of highway robbers. Bank of Uganda cleared Zain, according to Yesse Oenga, Zain managing director, to use the full suite of mobile commerce services prompting the telecom company to partner with Standard Chartered Bank to hold a settlement account insuring all ZAP money transferred by the over 600 Zain ZAP registered agents countrywide to serve its over two million Ugandan subscribers. The ZAP money transfer service is accessed any time through phone handset menus offered to most Zain customers with transactions over the phone secured with a password to protect customers against fraud (Kasita, 2009 [17]).

According to ITNewsAfrica (2009 [18]), MTN and Zain have moved over 40 billion shillings in mobile money transactions since they started the service--just a small fraction of the global trade that the telecoms are now likely to tap into.

Indeed, ITNewsAfrica (2009) reported recently that MTN is to start international money transfer services, a prospect that will shift the local rivalry with ZAIN to international level and usher the telecoms into one of the most capitalized industries—foreign remittances by Ugandans in the Diaspora that now stands at over 700 million dollars, now the largest foreign exchange earner for the country since coffee prices plummeted.

Not to be outdone and left out from the lucrative business, Warid Telecom announced that it would unveil its mobile phone money transfer service in Uganda this year (Lyatuu, 2010 [19]). George Shine, Warid Telecom's head of marketing, told the media in Kampala recently, that work on the service that will be rolled out to the entire country is in its final stages. Warid's entry will bring to three the number of mobile money service providers in the country after MTN's Mobile Money and Zain's ZAP money transfer services, which were launched last year (Lyatuu, 2010). According to Lyatuu, Warid Telecom currently has a customer base of two million subscribers.

Tanzania

Although launch of the mobile phone money transfer services in Tanzania occurred in mid 2008, the groundwork for it can be traced to December 1999 when Vodacom Tanzania Limited was granted its operating license by the government. The company is a joint venture between South African based Vodacom (with 65% shares) and Caspian Construction and Planetal communications which are two Tanzanian based companies (with 35% shares) (Taka, 2001 [20]). In command of an estimated 15 million subscribers, Vodacom Tanzania dwarfs its six competitors in the mobile phone services market (Kamndaya, 2009 [21]).

Beyond attracting the majority of mobile phone subscribers, a Vodacom Tanzania representative suggests that the company's most notable accomplishment is, perhaps, its ability to enlist over one million customers into M-Pesa, its mobile phone money transfer service in just 18 months since launch. This is the equivalent of a volume of 17 billion Shillings in just one month (Kamndaya).

The service includes the opportunity to send and receive between 2000 and 500,000 shillings all over the country including remote areas that are otherwise beyond the reach of commercial banks. In a country where only 11 percent have bank accounts, the service fills a void that has existed for long. Over 500 M-Pesa agents are spread throughout the country to facilitate the transactions (Kamndaya).

Although it has been the ambition of Vodacom Tanzanian to replicate this adoption success story in virgin areas of the country, a dearth of disposable funds available to agents throughout the company network has been a bottleneck for a while. Thanks to the generosity and good investment sense of the GSM Association Foundation, Inc. both Vodacom Tanzania and MTN Uganda have been facilitated "from the Mobile Money for the Unbanked Fund (Ngunjiri, 2009 [22]). Ngunjiri further asserts that the goal of this initiative is to link up to 86 percent of the rural population (mostly peasants and traders in

agricultural produce and livestock) to the banking sector. This population includes not only the unbanked but also the underbanked.

Vodacom Tanzania is particularly sensitive to any allegations that the service may be vulnerable to fraudsters. When Tanzanian deputy minister for Communications, Science and Technology deputy minister voiced concerns about possible theft of money from people's accounts as happened with Automated Teller Machine (ATM) cards, the M-Pesa product manager was quick to offer assurances of the proven security record of the service offering the legendary success story of the Kenyan M-Pesa experience as proof (Kamndaya, 2008 [23]).

Rwanda

In Rwanda, South African-based MTN Rwanda which has been operating in the country since April 1998 is the pioneer provider of Mobile Money Transfer services. The official launch date was early February 3 2010, but even before then some clients were already utilizing the service (Rwanda: 'Mobile Banking' a Welcome Addition to Financial Sector, 2010 [24]). Just like in Kenya, Tanzania, and Uganda MTN clients would be able to use the service to send, receive, and withdraw cash via a network of authorized MTN representatives. Access to this service has been long overdue in Rwanda where it is estimated that only 14 percent of the population engage banking services yet 20 percent use telephones (Rwanda: MTN Launches Mobile Money Transfer, 2010 [25]). Unlike Kenya where the service is both domestic and international and Uganda where the domestic service is soon to be augmented by international service, the Rwanda Mobile Money Transfer services are a purely domestic affair at the current time. But if the pattern of adoption in both Kenya and Uganda is an indication, it is just a matter of time for the Rwandan services to expand into the international sphere. A vibrant Rwandan community in the diaspora is eagerly waiting to be seduced into the pleasures of remitting monetary support to their loved ones via the mobile phone.

As with all countries above, government concerns about money laundering and exploitation of the system by terrorist organizations has necessitated regulations such as full registration of clients by company representatives and formal official identification (e.g., passport) of service users. While MTN Rwanda at the moment is the sole provider of mobile money transfer services in the country, if the experience of Kenya and Uganda is a guide competition from other providers (Rwandatel and Tigo are the other two major Telecom providers) is just around the corner. And it does not help matters that the Rwandan government has had several spats with MTN Rwanda for not fulfilling phone service quality expectations which have resulted in hefty fines imposed on the company (Kezio-Musoke, 2009 [26]).

Burundi

With a phone penetration rate below one percent (Carmony, 2009 [27]), it appears that Burundi's rendezvous with mobile money transfer services will have to wait till mobile phone use and access accelerates to levels that are comparable with those when the mobile money transfer innovation took root in its peer countries in the community. At the moment, it is not clear what moves Celtel Burundi, the dominant mobile phone player in the country, or its competitors are contemplating in this regard.

THEORETICAL DISCUSSION

Social Information Processing Model

The social information processing model (Fulk, Schmitz, & Steinfield, 1990 [28]) argues that a prospective user's adoption and use of a new communication technology is facilitated by the perceptions about the technology that arise from interaction with other people. Recognition of this point may explain the decisiveness with which the above telecommunication providers act to manage how they are talked about and therefore perceived by the public. For example, a Vodacom Tanzania official mentioned earlier was quick to allay any fears among the public about any security concerns about using the M-Pesa service.

Media Richness Model and Dual Capacity Model

The media richness model (Daft & Langel, 1984 [29]) and the dual capacity model (Sitkin, Sutcliffe, & Barrios-Choplin, 1992 [30]) share an emphasis of adopters/users rationally selecting from a range of available options the most appropriate or efficacious technological means (in their judgment) of accomplishing a task at hand. But the dual capacity model goes a step further by positing that users' adoption and application of technology also carries symbolic significance for the user and his/her observers in that it portrays him/her in a certain light.

These two theories together can explain the rising popularity and use of the mobile money transfer services noted in each of the East African countries (except Burundi). Prior to the introduction of the services, users primarily employed other means of sending, receiving, withdrawing and depositing their cash. For example, workers in Kenya who did not have bank accounts often resorted to entrusting their wages to bus drivers plying home routes for delivery to dependents (Wray, 2008 [31], Sanders, n.d. [32]). Wray adds that even the few workers that had bank accounts could not use them to send money to their relatives in remote areas of the country where banks do not operate. Other options involved using the postal service or seeking the assistance of a friend or relative heading where the workers' relatives stay. Consistent with both the media richness model and the dual capacity model, these workers and many other users are finding the mobile money transfer services more efficacious to manage their money than these alternative methods. Also, in line with the dual capacity model it can be argued that users regard utilizing these services as a status symbol. According to Carmody (2009), use or possession of mobile phones makes people to "feel more important" because it "represents a form of high-tech connection to the global information society and domestic social peers" (p. 17). Carmody, therefore concludes that the mobile phone accrues its import via not only its instrumentality but also its symbolism of inclusion and development.

Stakeholder Theory

Stakeholder theory (e.g. Freeman, 1984 [33]) provides a functional and inclusive definition of stakeholders who are referred to as individuals or organizations that can affect or are affected by a project. Primary stakeholders include members of the coalition who tend to support the project and secondary stakeholders are those whose environment is affected by a project but who may or may not receive direct benefit from it. Stakeholder theory also offers a mechanism through which

stakeholders are identified, categorized, and analyzed based on their respective salience or attributes such as power, influence, interests and roles.

The respective governments in the four countries mentioned above are key stakeholders concerned with the smooth operations of the money service without defrauding its citizens their power to enforce the regulatory regimes to ensure compliance from all the other stakeholders. Also, the telecommunications companies, as primary stakeholders reflect interest and commitment to their services by ensuring that funds are secured to invest in the development of the infrastructure, availability of money at all centers to process transactions to satisfy their customers, and use their leverage to publicize the services to attract more customers in the tightly competitive environment. For the customers or subscribers, and mobile money agents that are spread all over the four countries, the success of the money transfer operations is, like it is to the telecommunications companies, a kind of lifeline in which they are deeply staked. Any disruption of the service would, at any rate, negatively affect them while its smooth operation, positively impacts them. For external stakeholders, actions by the United Nations agency (Habitat for Humanity) that recognized M-Pesa of Kenya for its excellence and the scheme by some Kenyan banks to derail the spectacular performance of M-Pesa service illustrate the positive and negative forces by external stakeholders respectively.

Diffusion of Innovation Theory

The diffusion of innovations theory suggests that the diffusion of an innovation occurs when the adoption of an idea, practice, or object spreads by communication through a social system (e.g., Rogers, 1995 [34]). The theory explains the communication flow of new ideas into a community and how targeted communities respond positively or negatively to the ideas disseminated to them through both formal and informal communication networks by pioneers and champions of the innovations. Pioneers frame the meaning of the new idea, use existing formal and informal communication networks to talk to other people about the innovation, articulate its relevance, simplicity, adaptability, and usefulness. Gradually, some people are persuaded to become early adopters and then more people adopt the innovation when they start observing its benefits to early adapters until the rate of adaptation increases and a critical mass is achieved before the process levels out. According to the theory, laggards are those who fail to adopt the innovations for one reason or another.

All the telecom companies referred to above used the available formal and informal communication networks to vigorously market their services to the citizens of the respective countries and managed to successfully diffuse their innovation of using the mobile phone to transfer money where it had never existed before. Indeed, the rate of adoption, although not uniform in all the four countries, indicates that the service was embraced and continues to grow both spectacularly and steadily—a manifestation that the pioneers (the telecom companies) diligently and effectively framed the money transfer service, demonstrated its usefulness, simplicity to adopt, and when the benefits to early adopters became evident, more and more people signed up for the services. In Kenya, for example, users of the M-Pesa service has grown to 6.7 million while in Uganda and Tanzania, signs are that the services have equally attracted a sizeable number of adopters from the millions of subscribers to

the several companies. In a couple of years, a forecast could be made here, that, a critical mass will be realized in the three countries before the rate levels out. For the state in which Burundi finds itself in, nothing could better reflect the label of laggards in the adoption of innovations.

CONCLUSION

The telecommunication sector in East Africa is the most competitive, a situation that has led to innovation and creativity, resulting in deeper telephone penetration in rural areas, improved communication services, and a gradual transformation of the social and economic lives of the rural people in the East African region. The Mobile Money transfer narratives from all the five countries in the East African region indeed indicate how the mobile phone use has achieved different rates and levels of success in each country. While all the telecommunications companies introduced the mobile money transfer services in the four countries with the aim of reaching all their subscribers, figures cited in the narratives show that not all the subscribers registered to use the service. That could be explained by the fact while it is easy to operate a cell phone and make a call, navigating the menus on the hand set requires a certain level of education which most of the rural people in all the four countries may lack. Also, the rate of success attained by M-Pesa by Safaricom in Kenya, is unrivaled by her counterparts in Uganda, Tanzania, and Rwanda largely because Kenya is the most urbanized and largest economy in the region with possibly a bigger number of its citizens in the Diaspora compared with the other three countries.

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