

Running Head: HOW MOBILE TECHNOLOGY TRANSFORMED SMALL  
BUSINESS IN KENYA: A CASE STUDY OF M-PESA USERS

Title

How mobile technology has transformed small business in Kenya: A case study of

M-PESA users

By

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### Disclaimer

This project was done independently of Safaricom Ltd. At the time of publishing the research, the author was not an employee or paid agent of Safaricom Kenya whose product M-PESA is the subject of this study.

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## **Abstract**

### **How mobile technology has transformed small business in Kenya: A case study of small business M-PESA users.**

This case study proposes to investigate the usage of M-PESA, an innovative money transfer system and the success of small business owners in Kenya. It seeks to explore how mobile technology has transformed the economic environment of small business in Kenya.

Drawing on the diffusion of innovation theory model, I used a qualitative case study interview method during my research to examine the transforming effects of M-PESA on its users.

The study results indicate that indeed M-PESA has brought a significant and positive transformation to the majority of small business owners. The study identified various relative advantages that M-PESA brought into the business and lives of small business study participants. Within a short period of time, M-PESA has become very popular money transfer innovation attracting millions of registered users. The upsurge in usage and consequent demand has created challenges for the mobile phone provider – Safaricom.

Despite some of these pertinent challenges, the innovation has been embraced overwhelmingly by the majority of small business owners as the interview sample attests. The study has generated vital insights and lessons for governments and potential businesses within the East Africa region in terms of expansion, and regulation. Furthermore, it is an important addition to the body of knowledge and research within the industry.

## **How mobile technology has transformed small business in Kenya: A case study of small business M-PESA users**

### **Introduction**

This case study report is how M-PESA, a mobile money transfer service in Kenya has transformed small business users of the product. A representative sample of M-PESA users was selected to showcase transformation in the study concept which is viewed in two ways. First, it refers to observed transformation after a timeline; that is - before the introduction of M-PESA and after several months of usage. The second observation is through the characteristics of transformation gauged by individual usage of the technology and the effects of technology on users and others. A similar study grounded in diffusion of innovation theory was done by Kevin Zhu , Shutao Dong , Sean Xin Xu & Kenneth L Kraemer titled “Innovation diffusion in global contexts: determinants of post-adoption digital transformation of European companies”. The “results indicate that innovation diffusion can be better understood by including both innovation characteristics and contextual factors...” In this case study, the context is specific to Kenya and the small business users of M-PESA.

My interest in this area of study was aroused while on a visit to Kenya in 2003. I was intrigued by the use and growth of mobile telephony among the citizens. Later, in 2007 while visiting again, I was even more intrigued by the extent to which the use of mobile cell phones had created many business ventures in Kenya. When I compared with my own personal usage and those around me in Canada at that time, I concluded that there was need to study the impact of mobile phone usage in Kenya. My interest in this area increased and so did the progress of mobile telephony in Kenya.

First, I should state that I have social ties with Kenya having been born and bred in that country before moving to Canada. Therefore, my interest in any kind of development in Kenya goes beyond scholarly interests. Second, my personal perspective when undertaking a research study such as how mobile technology has transformed a place like Kenya emanates from a pragmatic premise. In their book *Theories of Human Communication*, Littlejohn, S. and Foss, K (2005) differentiates between pragmatists and determinists:

On one side of the issue are the determinists who state that behaviour is caused by a multitude of prior conditions that largely determine human behavior. Humans, according to this view, are basically reactive and passive (p.20)

As I approach the study of transformation by technology, I do not submit to the determinist view exclusively. Instead, I hold the premise that we as human beings are actively planning and executing goals that affect our destiny. As described by Littlejohn and Foss, the pragmatists' view is that "people plan their behavior to meet future goals. This group, see people as active, decision-making beings who affect their own destinies" (p.20).

Therefore through a pragmatic inquiry, the approach of this study is pluralistic and practical in nature. While I mainly rely on the one diffusion of innovation theory, other theories also inform the study, if subtly.

## Objective of Study

The title for this study is “How mobile technology has **transformed** small business in Kenya: A case study of small business M-PESA users”. It is therefore important to briefly discuss the concept of transformation. As mentioned above, the study considers two attributes with regard to transformation brought about by M-PESA. The first is regarding the attribute or characteristic of change – mostly positive change as observed by the participants. There are also negative unintended consequences brought by M-PESA. For example, attacks on M-PESA agents who carry cash for distribution has caused several challenges to Safaricom and security officials. Potentially, this will eventually lead to possible increase of service delivery costs which could put M-PESA at a disadvantage to other money service providers. It is also not clear how Safaricom handles the private information it gathers from millions of Kenyans who use M-PESA. The findings shall highlight these characteristics using the appropriate theory. The second is regarding the timeline for transformation. The study considered the timeline of transformation by M-PESA and determined that there was reasonable and significant change (read transformation) that occurred within a marked period of time beyond the normal social order in Kenya. This reasoning is supported by Williams, R (1974) in his book, *Television: Technology and Cultural Form* where he stated that “technology, including communication technology... is at once an intention and an effect of a particular social order” (Williams, 1974, 128). William’s statement resonates with this study based on the pragmatic premise mentioned earlier. It is also supported by the diffusion theorist Everett Rogers (2003) in his book *Diffusion of Innovations* where he explores the diffusion process. He posits the existence of four main elements in the diffusion of innovation process. These are (1) innovation, (2) communication channels,



(3) time and (4) social systems and defines diffusion as “...the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 11). As we discover later in the findings, the characteristics of M-PESA innovation as perceived by individuals help to explain its rate of adoption and consequently its transformative power or consequences.

Rogers, E. (2003) has defined the consequences of innovations as “...the changes that occur to an individual or a social system as a result of the adoption or rejection of an innovation...” (p. 436). He asserts that, while consequences are difficult to measure, they can be generally categorized into two categories. The first category includes the undesirable, the indirect, and the unanticipated types. These are often negative transformations or consequences. The second category includes the desirable, direct and anticipated consequences. These are often the most highlighted because of their positive nature. Since transformation is often linked to whether technology transforms individuals or communities of a smaller or larger society positively, this study has focused on the positive aspects of innovation while also highlighting a few undesirable consequences for the small business users of M-PESA.

It is important to note that scholars of sociology and development studies have argued about the concept using terms such as “social transformation”, “social mobility”, “status change” among others. In many instances, these references are tied to economic statuses of individuals or societies. For example Peter F. Drucker wrote an article titled: “The Age of Social Transformation” (1994) in which he analyzed social transformation with an emphasis on economics and politics. His article highlighted the importance of a knowledge society. The age of social transformation is therefore, a survey of the epoch that began early in this century, and “...an economic order in which *knowledge*, not labor

or raw material is the key resource” (p1.) Drucker further asserted that “the age of social transformation will not come to an end with the year 2000 -- it will not even have peaked by then” (p.1, 1994)

First, I am specifically drawn to his explanation of the concept of social transformation because it is my belief that the present and future of Kenya’s economic resource nerve is mainly being propelled by knowledge workers. Second, the M-PESA innovation became a reality past the year 2000 thereby justifying his prediction. Third, there is a high population of educated knowledge workers in Kenya who are engaging in small businesses and innovations such as M-PESA in a transformative pattern.

Recently, another scholar - Kubilay Akman (2008) also articulated the concept of transformation with an ideological paradigm in his paper titled “Ambiguities of Social Transformation: A critical framework for the concept” His notion of the concept of transformation encompasses the present paradigm because transformation should be relevant to the current historical period, inter-disciplinary, and separated from “...*“development”* allowing for its analysis as a new concept to able to respond to the needs of a global age...” (p. 24). In this case, this study and inquiry hopes that M-PESA’s transformation would move beyond Kenya. According to Sheila Kangwagye (2009) from Press Office of African’s leading telecommunication company, MTN – Mobile Telephone Networks (<http://www.itnewsafrika.com/pressoffices/mtn/0816.html>), the company also launched a similar product like M-PESA in Uganda.

Additionally, Akman’s paper “can be considered a theoretical framework focusing on social transformation as defined through the examination of its principal ideologies and the study of the concepts’ reproduction through international institutions” (p.23) He shares some similarity with Rogers (2003) who acknowledged that generally, the

consequences of innovation are difficult to measure. This he does by asserting that social transformations – *including innovation transformations* (emphasis mine) are ambiguous as his article's title suggests. This means that transformation is not always accompanied by positive or negative characteristics. What is positive for one community may not always be suitable for another community. In the case of this study of M-PESA, I have noted that there some respondents whose small businesses were affected negatively by the introduction of M-PESA. One such respondent indicated that she was losing profits and customers who used to buy airtime from her small business because they were resorting to paying airtime using their M-PESA accounts. Perhaps, further studies may be required to determine the extent of other negative transformations of M-PESA.

Another way in which we can recognize transformation has been discussed by Kamau, C and Rutland A in their paper: "The global 'order', socioeconomic and the economics of African identity" (2005). In the paper, they decry the fact that chronic elitism within Africans has created a two –tier social order whereby those in higher positions take advantage of the global economic system at the expense of other Africans. Consequently, there are various indicators or traits of individual economic mobility and social class which affect African identity. Hence according to the authors, the socio-economic status (SES) and African identity were found to be correlated. This means that SES affected the individuals' social values such as corruption, commitment to national economy. They assert that:

In the lowest SES group, economic factors such as commitment to the national economy and the powerlessness belief are an integral part of African identity concepts. On the contrary, in the highest SES group, economic factors serve as precursors to African identity (Kamau, C. & Rutland A: 2005 p. 186)

Therefore, my conclusion is based on the author's assertion that small business users of M-PESA would represent those who are making attempts to move from one socio-economic status to another. Since they are considered lower in terms of SES, their individual and status transformation is seen as key to the identity of many Kenyans reflected in the way that they use their social capital. Additionally, they represent a significant population of the Kenyan public whose lives have been transformed by M-PESA.

One example of this transformation is highlighted by Chebet Karago (2010) in Safaricom's magazine – *The Option*. In the December 2009- February 2010 edition, her article titled, "A lifeline of water" described how the residents of Musingini, semi arid town in Machakos District of Kenya are enjoying clean affordable and sustainable water through a partnership of Safaricom and Grundfos Lifelink the Kenyan subsidiary of the Danish Grundfos (p.12-15). Grundfos Lifelink built the water infrastructure which includes pipes, tanks and solar pumps and the residents are able to activate and pay for the water service through M-PESA bill payment on their cell phones. In the end, the residents are "exhilarated by the transforming health benefits of potable water, adequate washing facilities and flourishing vegetable gardens. They are also impressed by the technology that has made it all possible" (Karago, C: 2010 p.13)

This study therefore focuses on how M-PESA - one of Safaricom's products, has transformed the lives of small business users in Kenya. It highlights some specific aspects of their transformation based on the interview results. Additionally, the purpose of the study is to explore this hypothesis by creating an in-depth portrait of how M-PESA is transforming various aspects of life in the African nation.

## Literature Review

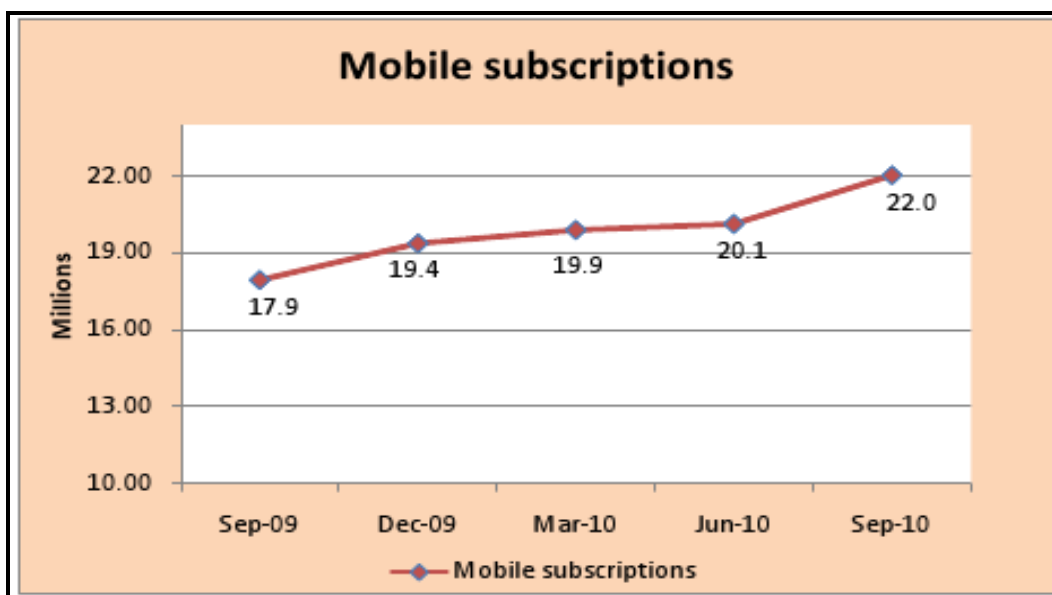
Since late 1990s, there has been an upsurge of mobile phone use in sub-Saharan Africa. The International Telecommunications Union (ITU) reported that between 1999 and 2004, Africa recorded subscriptions for mobile phones at a far greater rate than Asia and nearly three times faster than USA and Canada. According to ITU data, Gray V. (2005, p.1) points out, “In 2004 alone, the African continent added almost 15 million new mobile cellular subscribers to its subscriber base, equivalent to the total number of (fixed and mobile) telephone subscribers on the continent in 1996, just eight years earlier.” Kenya became one of the countries at the forefront of this revolution. One of the main carriers of mobile phone products is Safaricom, a part of Vodafone group of companies.

According to a report by *The Economist*, Safaricom’s M-PESA subscribers exceeded seven million and other mobile providers across the continent have started copying their trend. The emergence of M-PESA is mainly due to the unprecedented growth of mobile phone usage as well as other factors this paper discusses. In September 2009, *The Economist* further noted that.

Once the toys of rich yuppies, mobile phones have evolved in a few short years to become tools of economic empowerment for the world’s poorest people. These phones compensate for inadequate infrastructure, such as bad roads and slow postal services, allowing information to move more freely, making markets more efficient and unleashing entrepreneurship. All this has a direct impact on economic growth: an extra ten phones per 100 people in a typical developing country boosts GDP growth by 0.8 percentage points, according to the World Bank...Even in Africa, four in ten people now have a mobile phone. (From *The Economist* article “The power of mobile money” September 24, 2009).

Many Kenyans and indeed many Africans would agree with report by *The Economist*. As a matter of fact, they have embraced mobile technology so much so that those companies and institutions willing to invest in Africa are reaping significant profits as citizens' lives are improved.

According to the *Quarterly Sector Statistics Report* by the Communications Commission of Kenya (CCK) released for July/September 2010/2011, there was a recorded 9.5 percent mobile subscriptions growth from 20.1 million in the past quarter to 22 million subscribers. This was the highest growth that has been recorded over the last three quarters. It should also be understood that according to the Kenya National Bureau of Statistics, the population of Kenya as reported in 2009 was 38.3 million. As recorded by the author of the study – Kilele, K.M in 2009. Therefore, the CCK statistics on the growth of mobile subscriptions in the country show a significant participation in mobile technology at a very high level. The chart below (*Figure 1*) is from the above mentioned report by Communications Commission of Kenya (CCK - 2010-2011) and reflects this exponential growth.



*Figure 1–Growth in mobile subscriptions (from CCK report) based on operators' returns*

Small business owners in Kenya contribute significantly to the nation's economy. This study mainly focuses on their usage of M-PESA. By extension the positive effects of their transformation positively affects the communities in which they operate from. In another ITU article written by Gray, V. (2006) titled *The unwired continent: Africa's mobile success story*, she highlights the following:

The impact of the mobile phone in Africa is impressive. The statistics and survey findings....highlight that within just a few years the mobile phone has managed to overtake the fixed line market, to more than triple total (fixed and mobile) telephone penetration - from 3.5 percent in 1999 to 11.5 percent in 2004 - and to provide access to telecommunications to people in previously unconnected areas and villages. (Gray, ITU 2006, p. 6)

Gray further explains that since there exists informal sharing of mobile phone handsets among family members, friends and at community phone shops, there is a high possibility that the impact of mobile phones in Africa is even greater. Later in this report, a clear picture of how the impact of M-PESA on small business users is reflected on this issue.

It should also be noted that subscriber statistics do not tell the entire story since the number of mobile users is higher than the number of subscribers. Informal sharing with family members and friends and community phone shops provide access to mobile services even to those who cannot afford to own their own phone. (Gray, V. ITU 2006 p.6)

### **What is M-PESA and how does it Work?**

M-PESA is Money transfer by short messaging service (SMS). The "M" stands for Mobile. PESA is a Kiswahili word which means "money". M-PESA is therefore

translated as “Mobile-Money”. Launched in March 2007, M-PESA was aimed at mobile customers who do not have a bank account by allowing such subscribers to transfer money using their mobile phones. Whereas M-PESA was not registered as a bank, it was designed to provide financial services for the many “unbanked” Kenyans who were previously without access to conventional or traditional banking. Despite a few hiccups at the beginning due to Central Bank of Kenya regulations, M-PESA took off successfully.

Anyone who owns a mobile phone would buy Safaricom prepaid airtime. Then he/she would go to an M-PESA agent found at various locations in Kenya for transactions. The person would then send or receive money to another by SMS instruction. A person can also buy and sell M-PESA e-money by depositing and withdrawing money in an M-PESA account using their mobile phone. Such transactions would take place literally anywhere that an M-PESA agent exists. Overall, the introduction of M-PESA allowed users to make the following basic types of transactions:

- Money transfers from person to person.
- Money transfers from individuals to businesses.
- Money transfer from business to individuals
- Cash withdrawals at designated outlets
- Cash withdrawal from designated banks e.g. M-KESHO
- Loan receipt or repayment
- Paying for consumer goods and services.

Many developments have followed the introduction of M-PESA system since its inception. However, the process of using and benefiting from M-PESA remains simple – it is still a mobile bank to many users. In the words of an M-PESA user interviewed by



BBC's Fiona Graham (2010), "I don't need to go to the bank when I have the bank in my phone!" (BBC Business News, November 22, 2010).

Below, (Figure 2) I have included an illustration from the Hughes & Lonie, (Innovations, 2007, p.75) showing how the M-PESA system works:

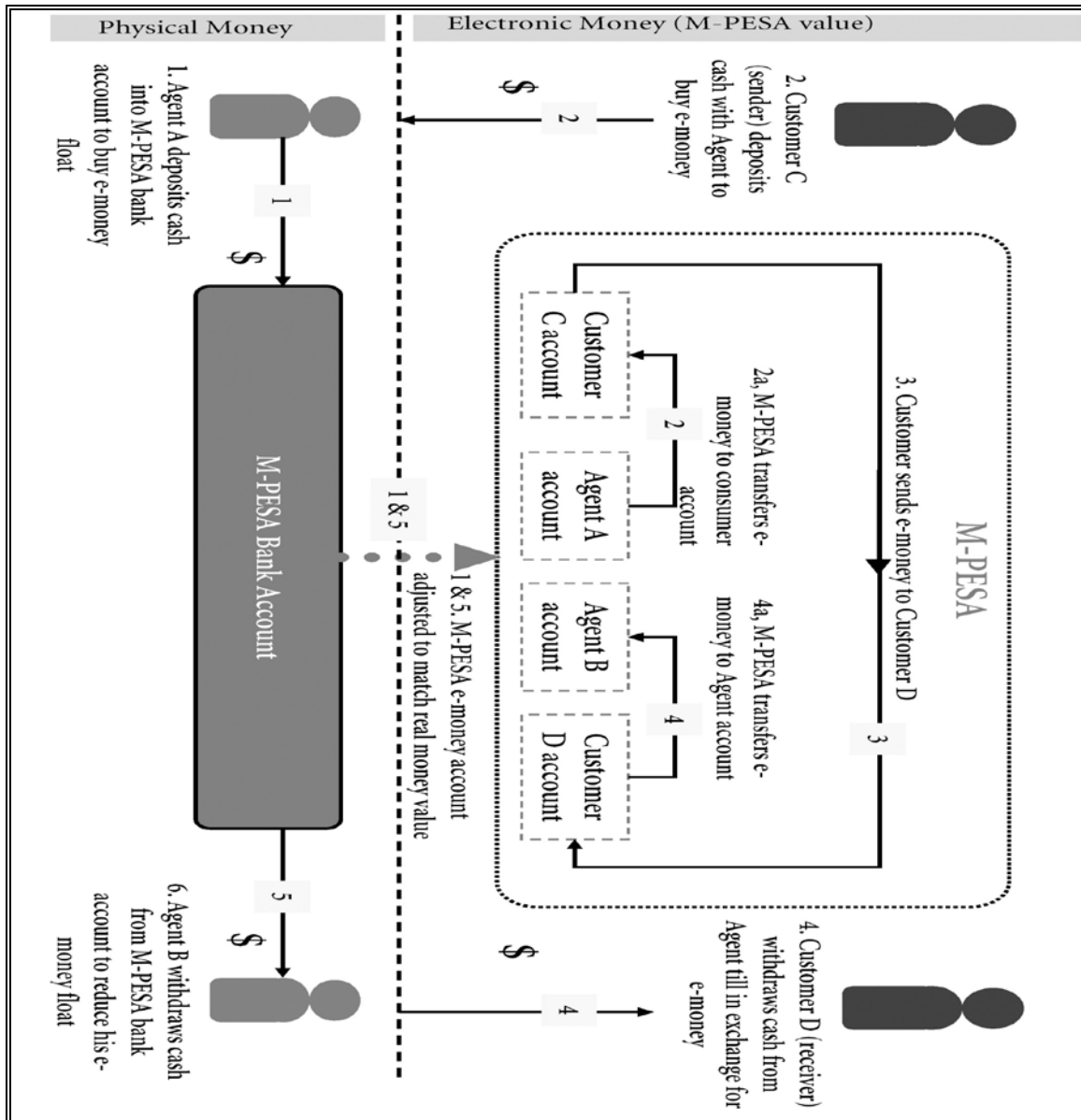


Figure 2 – Overview of M-PESA service

## **History and Evolution of M-PESA**

M-PESA was introduced in Kenya through Safaricom by Nick Hughes a Vodafone executive and Susie Lonie “an m-commerce expert who was brought to work through the detailed design phase and project manage the overall delivery of the service from pilot phase to commercial delivery”. (Innovations: p.63). The actual technology was developed by a UK based technology and product development company known as Sagentia. ([www.sagentia.com](http://www.sagentia.com)). In one of its publications (The Gen: Autumn 2007) an article titled “Mobile banking aids economic growth” details the firm’s involvement with M-PESA. This collaboration between Sagentia and Vodafone led to the introduction of M-PESA in 2007. In the beginning, M-PESA’s customers came through Faulu Kenya – a local microfinance institution in Kenya with thousands of borrowers typically running small businesses. The pilot project started in October 2005 and ended in May 2006 with various challenges as well as lessons along the way. Despite these challenges, the trial was nonetheless successful.

Mr. Hughes and Ms Lonie (pioneers of the M-PESA project) had different backgrounds but answered to an inviting opportunity to participate in making a difference in Africa through the M-PESA innovation. Faced with a choice between introducing tested products/services found in the Western world and building from scratch, they reflect thus:

“...It became clear that we would have to make significant compromises around the functionality and user experience if we bought one of the proprietary products. We reluctantly decided that we would have to bite the bullet and build our own service from scratch...” (*Innovations* p. 69)

According to them, the M-PESA service would therefore be specifically targeting the un-banked who formed a huge section of the Kenyan population.

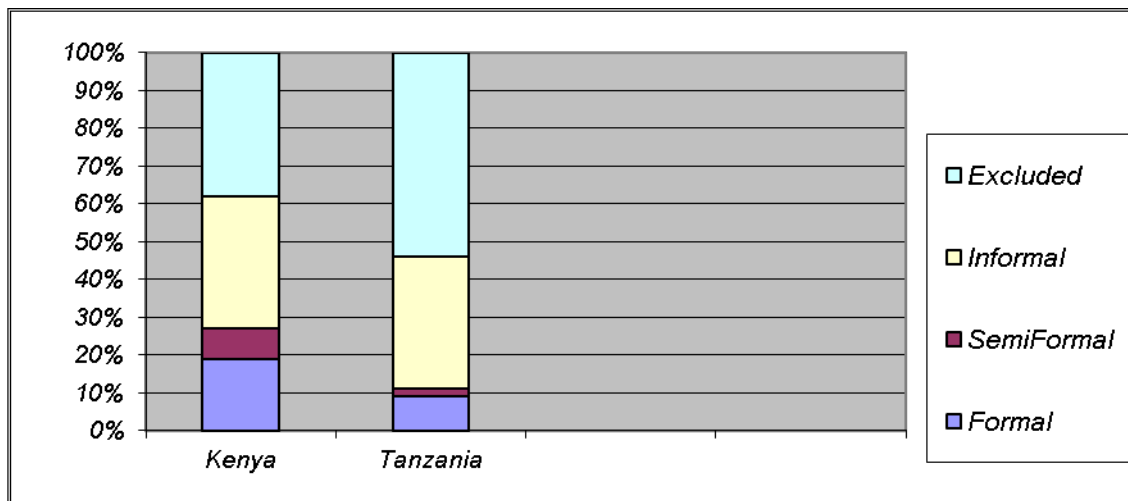
Therefore, in technical terms, the consumer interface of the physical phone to be used would have to be a basic phone and not a smart phone. Secondly, they had to find customers with real market need to use the service. Therefore, the initial M-PESA project partnered with Faulu Kenya, a local MFI (microfinance institution) already operating in the country and providing small businesses with limited financial loans.

They also needed retail outlets to act as M-PESA agents where consumers could go to deposit or withdraw cash from their e-money accounts.

One of the challenges was dealing with the Central Bank of Kenya (CBK) to enable money transfer in Kenya by the unknown product –M-PESA. Details of the challenges they faced and key events in the development of M-PESA are encapsulated in a case study by the Alliance for Financial Inclusion (AFI), a global coalition of Third World central banks and other regulatory and financial policy making organizations. Through their network, policy makers in developing countries share their knowledge and experiences with proven financial inclusion policies. AFI was founded in 2008 and is administered through German International Cooperation. It also funded by the Bill and Melinda gates Foundation.

In June 2006, the Financial Access Survey highlighted to the CBK the low reach of traditional banking to Kenyans. Mobile phones had penetrated the Kenyan market yet for every Kenyan that had access to a bank account; at least two others had access to a mobile phone.” Reports produced by GSMA (an association of mobile operators and related companies devoted to supporting the standardizing, deployment and promotion of the GSM mobile telephone system) show how financial services were accessed by

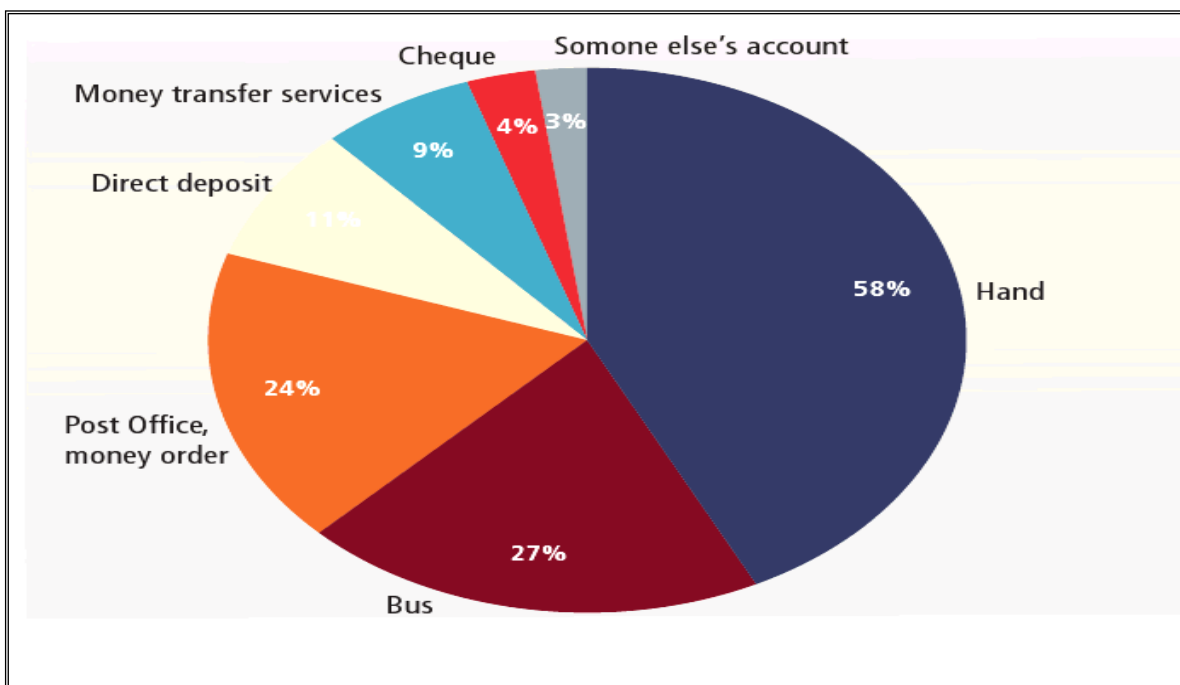
Kenyans prior to M-PESA. For example, a review paper entitled “What makes a successful mobile money implementation? Learnings from M-PESA in Kenya and Tanzania” by Camner, G. Pulver C and Sjoblom, C (2009) under the organization – FinAccess and FinScope, clearly showed that 38% of Kenyans did not use any form of financial services. The underlying cause of the low take up was the cost of accessing the traditional banking service including formal, semi formal as well as informal services. In Kenya, the formal sector accounted for 19%, the semi formal sector - 8% whereas the informal sector - 35%. I point out this fact because small business users of M-PESA constitute a large percentage of people who do business transactions through the semi formal as well as the informal sector. Therefore, it can be argued that they affect the statistics mentioned. Whereas the table below (*Figure 3*) illustrates a comparison of financial access between Kenya and Tanzania, a look at the statistics shows that even in Kenya the formal sector is still out of reach of many people.



*Figure 3 – Financial Access in Kenya and Tanzania before 2006*

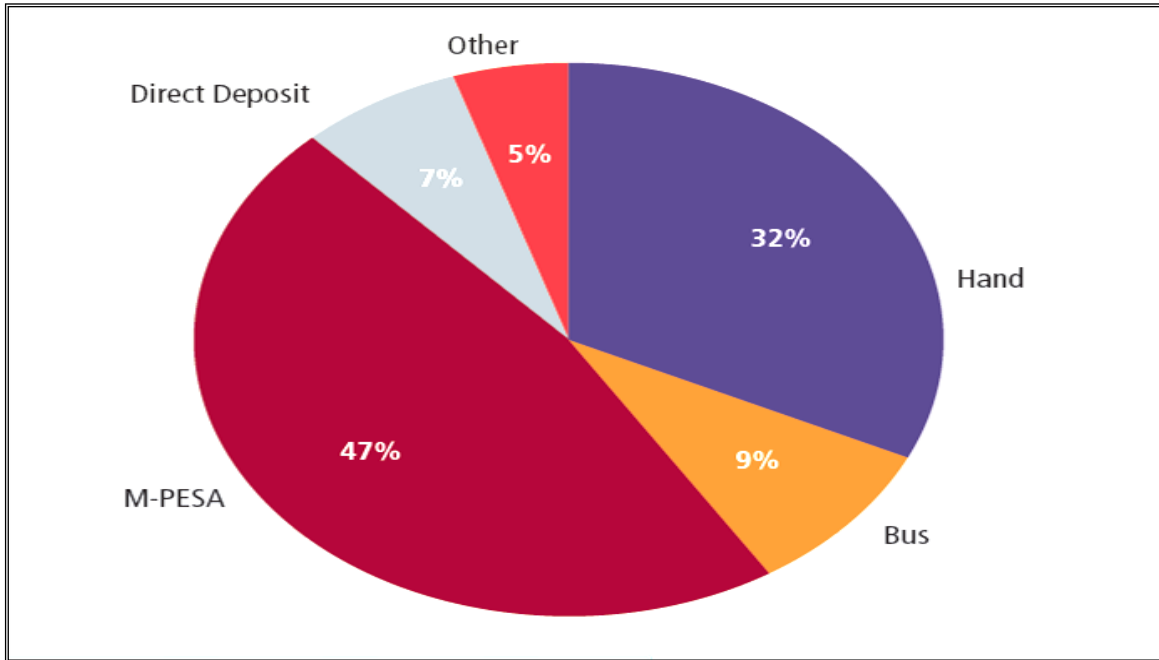
The surveys later drew a good picture of a massive reduction in the use of delivery by hand, Post Office money orders and bus and courier companies, following the introduction of M-PESA in Kenya. The findings of this study further cement the fact that

indeed transformation occurred in the Kenyan landscape with the introduction of M-PESA. The following two (*Figure 4*) and (*Figure 5*) charts indicate the way people in Kenya sent money before and after the introduction of M-PESA. It is clear from the charts and from interviews that prior to M-PESA, people used bus couriers and hand delivered parcels containing cash to their respective recipients. Obviously, this presented security problems. Furthermore, reliability of the bus couriers to deliver money/parcels safely was in doubt and posed a risk to service users.



*Figure 4 – How People in Kenya sent Money before M-PESA (Above)*

*Figure 5 – How People in Kenya sent money after the introduction of M-PESA (Below)*

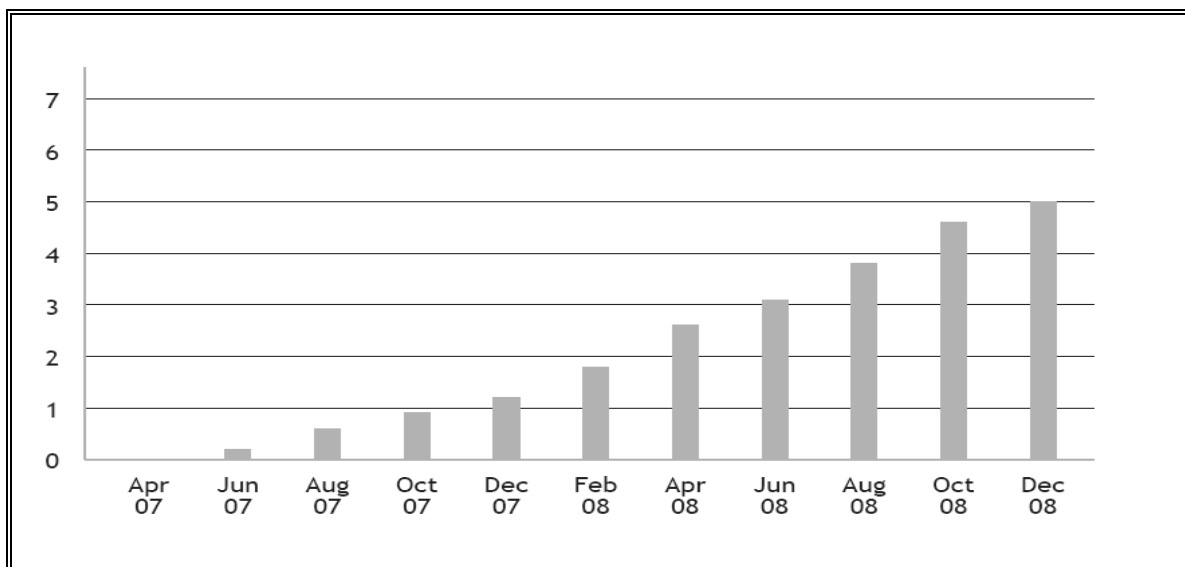


In August the 2006, Safaricom approached CBK regarding M-PESA. By December of the same year, Safaricom had submitted a detailed risk mitigation program as per the CBK request and a detailed assessment of the M-PESA systems conducted by a consulting firm. In January 2007, a CBK internal review of the Safaricom proposals determined through a legal opinion that M-PESA was not a banking business.

In February CBK issued Safaricom a Letter of No Objection” and by March M-PESA was officially launched. Within three months, M-PESA had 175,000 customers, 577 agents by the end of June 2007. In March 2008, another major step for M-PESA occurred when Safaricom allowed bulk payments such as salaries through the M-PESA system.. Organizational accounts were also created so that schools could accept tuition fee payment using the service. In May 2008, M-PESA users hit 2.5 million and by September there were 4 million active users and 4,230 agents.

The exponential growth of M-PESA alarmed the government which called for auditing of their service towards the end of 2008 fearing money laundering and depositors' security. It was clear that M-PESA had taken off big time as per the data collected by Financial Access. In the report "Case study: Enabling mobile money transfer. The Central Bank of Kenya's treatment of M-PESA, 2010, p. 3)," it stated that "from its launch in 2007, the service reached over five million customers in less than two years - this was already more than all the banks combined"

The growth of M-PESA is shown in the chart below (*Figure 6*) has taken from Financial Access



*Figure 6 – Growth of M-PESA users in millions (Financial Access, 2006)*

This study greatly benefitted from literature on M-PESA and mobile telephony in Kenya and Africa and I believe it will undoubtedly add to the growing list of M-PESA discourses and related topics of mobile money transfer. While conducting research, I discovered that many articles and research papers on M-PESA have been presented at the GSM World Congress since the introduction of M-PESA in Kenya. Among such articles are "Designing Mobile Transfer Services: Lessons from M-PESA" found in the Mobile

Money for the Un-banked Annual Report of 2009, “What makes a Successful Mobile Money Implementation. Lessons from Kenya and Tanzania”, and last but not least, an article titled : “Leading independent M-PESA cash agency network in poor western Kenya” – a discussion from the GSMA World Mobile Congress in Barcelona in 2010.

Surprisingly, within Kenya, I found little research on M-PESA by indigenous Kenyans. The most notable indigenous Kenyan who has written about M-PESA is a lecturer at a Kenyan university, Mr. Tony Omwansa. His notable article was written for the Mobile World Congress in 2009 and titled “M-PESA: Progress and Prospects.” In it he discusses why M-PESA has succeeded in Kenya, its innovative and unintended consequences.

The process of building theoretical framework for this study can also be attributed to many months of course study on theories in the University of Alberta MACT program. Materials such as *Theories of Human Communication* by Littlejohn, S and Foss, K as well as *Communication in History* by Crowley, D. and Heyer, P. (2007) helped me to develop a good understanding of applied theory on mobile communication topics including M-PESA. Additionally, I referenced to Robert K. Yin’s book, *Applications of case study research* (2003) to help me establish the role of theory in case studies as well as how to select units of analysis.

Other works include David Silverman’s book titled: *Doing qualitative research: A practical handbook* (2005). Through the readings from the text, I was able to “think about the theoretical basis of the research, understand what data and methods are relevant to the M-PESA topic, grasp the elements of qualitative analysis and see what is involved in designing a practical, achievable research study” (Silverman: 2005, p. 43).



As I mentioned earlier, one of the most relevant historical information about M-PESA was from Nick Hughes and Susie Lonie whose involvement in the ground breaking work of M-PESA I have acknowledged.. Their rendition can be found in the winter and spring 2007 edition (pp.63-81) of *Innovations*.

The majority of other discourse on M-PESA can be found in websites belonging to various microfinance organizations and Nongovernmental organizations (NGO's) with special interests in developing countries. One such organization is CGAP (Consultative Group to Assist the Poor). This organization has produced a number of publications on M-PESA since 2007. Among these is a brief prepared by Olga Morawczynski titled: "Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-PESA (2009)". It was funded by Microsoft research and the University of Edinburgh. This research dwelt on the how poor rural people in Kenya use M-PESA and it presented observations on how it has impacted their lives.

Other published studies by the same organization include "Going Cashless at the Point of Sale: Hits and Misses in Developed Countries" (Mas, I and Rotman, S (2008) and "Banking on Mobiles: Why, How, for Whom?" (Mas, I. and Kumar, K., 2008). Mas, I (2009) have also written two articles on M-PESA. The first is titled: "The economics of branchless banking," *Innovations*, 4(2), 57 -76 whereas the other article is co-written by Morawczynski, O and was aptly titled "Designing Mobile Money Services: Lessons from M-PESA," *Innovations*, 4 (2), 77-92. These studies and articles provided me with vital background information upon which I anchored my research project.

To understand some of the challenges of small business owners, I drew upon my personal experience growing up in a family that owned a small business as well as published information on small businesses. With regard to M-PESA, it was noteworthy to

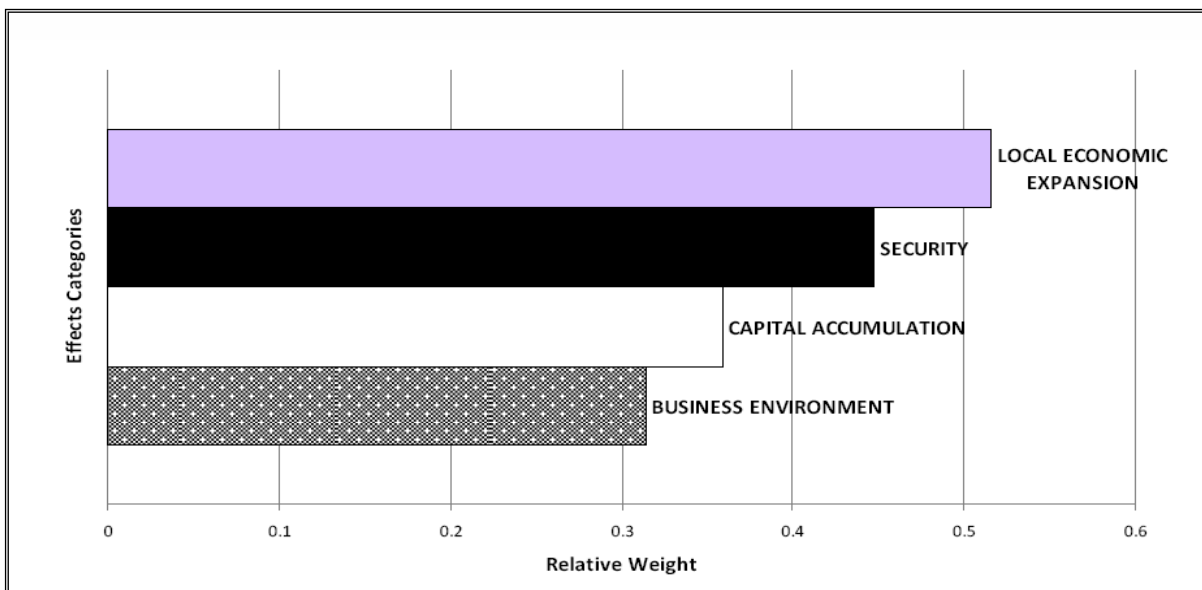
read Anthony Wanjohi's article "Challenges Facing SME's in Kenya" (that illustrates how poor infrastructure, lack of credit and market information hamper growth of this industry. Thanks to M-PESA these problems are being solved as we shall see shortly.

Another study and report focusing on the economic advantage of M-PESA was done by Suri, T. and Jack, W. Their paper provided a description of the service and reviewed the potential economic effects of M-PESA "...primarily at the household level, but also in terms of macroeconomic and monetary aggregates. It then produced a detailed portrayal of patterns of use across urban and rural population, using data from the first large household survey focused..." on M-PESA (Jack & Suri: 2010 p.2).

Furthermore, I also investigated another relevant case study by Alliance for Financial Inclusion (AFI). Produced in 2010 and entitled: "Enabling mobile money transfer. The Central bank of Kenya's treatment of M-PESA", the report highlights the historical development of M-PESA from a policy framework perspective. This useful report looked at the Central Bank of Kenya (CBK) process of assessing the risk of M-PESA and determining how to fit it in the existing regulatory framework.

I found another important study on economics of M-PESA conducted through the Iris Centre –University of Maryland by Financial Services Assessment (FSA) group. The report was compiled by Plyer, M.G, Haas, S, & Nagarjan, G and is titled "Community Level Economic Effects of M-PESA in Kenya". It was most useful in the sense that it explored the economic effects of M-PESA in Kenya at the community level. They identified eleven economic effects of M-PESA "within the broad categories of local economic expansion, security, capital expansion and business environment..." (Plyer, M.G. et al, *p. iii*, 2010). The effects were categorized and ranked using a weighted system. My attention was drawn to the results of this study because I was researching on

how M-PESA has transformed small business users. It is important to note that results of FSA study also put more weight on the local economic expansion as an effect of M-PESA in the specific communities under study. Furthermore, the FSA study showed that some of the effects of M-PESA in the said communities included an increase in money circulation, expansion of businesses and greater employment. (Plyer, M. G et al, p. 25, 2010). The Figure below (*Figure 7*) shows the ranking and effects as portrayed by this group:

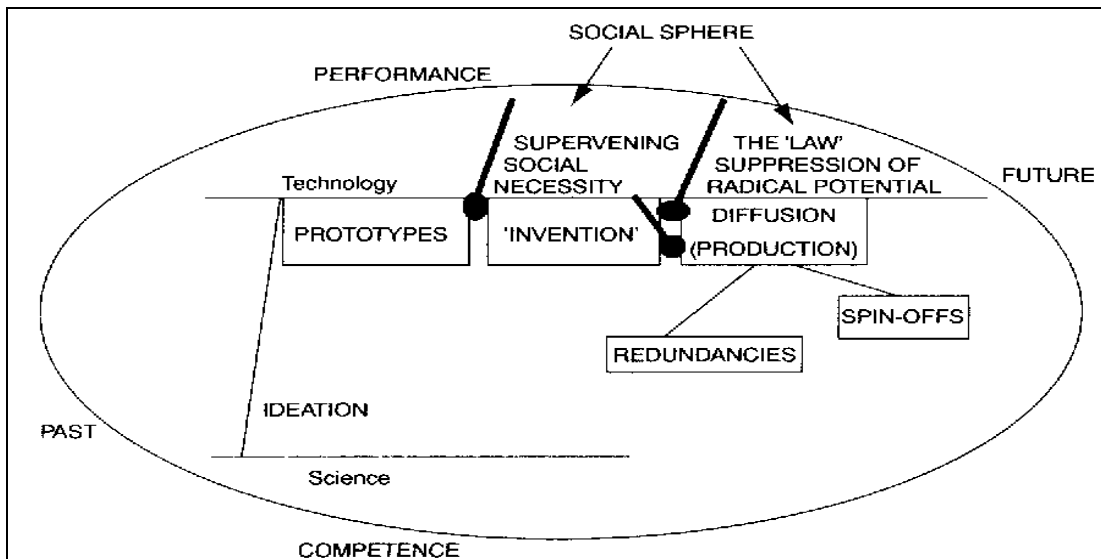


*Figure 7 – Effects of M-PESA on communities from Plyer, M. G et al, (p.19, 2010)*

Even though the FSA research study dealt with a slightly different aspect of M-PESA from that which I have taken, results show similarities. Therefore, one can say with confidence that both results highlight how M-PESA is significantly transforming the Kenyan landscape.

Last but not least, I also chose to analyze the rendition and progress of the M-PESA story as told by those who formulated the innovation using Winston’s model. An

illustration of Winston's Model can be seen in the figure below (*Figure. 8*) taken from the book *Media technology and society* by Winston, B. (2000, p. 7). This mid level theory complements the macro level diffusion of innovation theory that has been applied in this study.



*Figure 8 – Winston's Model*

According to this model, supervening social necessity (social factors) can be when:

- (a) Other technical factors that assist in innovation/diffusion or there is;
- (b) Concentration of social forces working directly on innovation and finally,
- (c) Commercial factors.

Whereas the Winston model has been used to explain the adoption of technology and media, in this study, I believe that it fitted well within the historical explanation and development of M-PESA. For example, the history and beginnings of M-PESA as outlined earlier showcases why the law of supervening social necessity applies here.

It is important to compare and contrast this case study with some previous studies included in the literature review. It should be noted that this study specifically looked at the M-PESA vis-à-vis the usage by small business owners in Kenya. Other studies have

looked at broader populations and communities. For example, while the study by Plyer, M.G, Haas, S, & Nagarjan, G titled “Community Level Economic Effects of M-PESA in Kenya” highlighted the success of M-PESA like this one does, it mainly analyzed the economic effects of M-PESA at a community level while mentioning the business effect briefly. This study accomplishes more in terms of looking at the effect of M-PESA on business by highlighting the success of M-PESA and also showcasing the characteristics of the diffusion process through the diffusion of innovation theory.

Second, the methodology and design of this study is theory and research driven. This means that this study is first and foremost an academic undertaking whereas some of the studies I had mentioned above are influenced by specific organizational need(s). For example, studies by CGAP (Consultative Group to Assist the Poor) have a positive bias towards their organizational goal as a non-governmental organization.

Third, there are similarities with the majority of case studies that I have referenced in terms of geographical location. All of these case studies (including mine) focus on Kenya. For example, Tony Omwansa’s article “M-PESA: Progress and Prospects” mainly discusses why M-PESA has succeeded in Kenya. The other case study situated in Kenya and referenced in this study was authored by Mas, I & Morawczynski, O. (2009). “Designing Mobile Money Services: Lessons from M-PESA” Last but not least, I have referenced Jack, W. & Suri’s article – “The Economics of M-PESA” which also focused on Kenya. (2010). I am aware that there are similar products to M-PESA found in other continents. For example, according to Mark Pickens article, “Window of the Unbanked: mobile money in the Philippines”, the country hosts two of the earliest pioneers in mobile money — Smart Money launched in 2001 and Globe’s G-Cash launched in 2004. In addition, I am well aware that in Afghanistan, there exists M-PAISA, a product launched

in 2009 according to an interview by Paul Leishman “M-PAISA: Zahir Khoja Describes the Challenges and Opportunities of Launching Mobile Money in Afghanistan” (September 8, 2009).

In Europe, the mobile phone company – Ericsson recently launched a money transfer platform known as “Ericsson Money” which is “...available across seven European countries” and “...connected mobile money services that make sending, receiving and spending money on mobile phones easy and instant...” (Retrieved May 20, 2011 from [http://www.ericsson.com/news/110608\\_money\\_244188810\\_c](http://www.ericsson.com/news/110608_money_244188810_c) )

We can therefore draw some initial conclusions that there exists opportunities for more research on mobile money transactions beyond Kenya and other geographical locations. Such research may draw a relatively good comparative picture of mobile money that could lead to conclusions as to whether M-PESA and other similar innovative products could be replicated globally in one way or another.

## **Methodology and Research Design**

To formulate the framework of this research, the study relied mainly on the diffusion of innovation theory as outlined by Everett R. (2003) in the book *Diffusion of Innovations*. Additionally, the history of M-PESA is articulated by the innovators Hughes and Lonie, S in their paper “M-PESA: Mobile Money for the Unbanked” (2007).

Most importantly, the diffusion theory was relevant for the case study to determine the transformations that mobile technology such as M-PESA has brought o Kenyan users and non users. Therefore, this research sought to explore some correlation between usage of M-PESA as a mobile-phone product and the success of small business owners through diffusion of innovation traits. The research design focused on a case study model by interviewing several users of M-PESA in Kenya. The questions formulated for the interviews were designed based on the theory and the responses point toward transformational themes.

There were a total of seven interviews in Kenya with six in Nairobi and one in Kisumu, Kenya’s third largest city. All of them were recorded in audio or video tape and lasted an average of between 20 to 40 minutes - usually in one sitting. No follow up interviews were required. Generally, all respondents were happy and willing to participate in the study. Initially, I had feared that some respondents might feel the information sought may be too personal but thankfully this was not the case. In addition, some of the participants thought that I (researcher) was working for Safaricom. Upon being reassured that Safaricom did not sponsor the research, all the researchers were forthright and informative.

The responses from these interviews were then transcribed and coded to look for descriptions of thoughts, through words, phrases, themes and the meanings categorized

appropriately. The method of data analysis used in this qualitative research varied from grounded theory, logical analysis and content analysis of the interviews. The conclusions derived showed that indeed certain transformations had taken place in the lives of these people, their businesses and the larger community which they represent.

The conclusions examined the context of use through time, space, other technologies, values, meanings, characteristics, unintended consequences as well as social relationships among other issues.



## Study Findings

### *The Interview Questions*

There were six prepared basic interview questions. During the actual interviews, the necessary probing questions were asked so as to gain a full understanding of the respondents' initial answers. The following were the basic interview questions prepared before hand and asked after initial familiarity greetings as customary in Kenya:

1. Would you please explain how you did your business banking before being introduced to M-PESA?
2. How has M-PESA brought a difference to your business?
3. In terms of usage, what are the a) Banking and b) Communication challenges you had before using M-PESA that do not exist anymore?
4. How are you dealing with any challenges that are brought by using M-PESA if any?
5. What do you think is the overall impact of M-PESA to your industry?
6. Considering everything, how satisfied are you with M-PESA? Would you recommend M-PESA to someone else? Have you recommended M-PESA to someone else?

The questions elicited certain words and phrases related to transformation themes and content. This eventually formed the basis of the final conclusion as we shall discuss later. The figure below (*Figure 9*) shows some of the responsive key words/phrases from the participants.

| Interview Questions  | Key Words, Phrases _Transformation Themes  |
|--|--|
| Q. 1 Would you please explain how you did your business banking before being introduced to M-PESA  | Traditional banking, courier, bus, cheque deposit, cash transactions   |
| Q2. How has M-PESA brought a difference to your business?  | convenience, ease of transactions, reduced movement/transportation, security Money storage format = security, spot on, , no disruption to work, low cost of business |
| Q3. In terms of usage, what are the a) Banking and b) Communication challenges you had before using M-PESA that do not exist anymore?                  | “Safaricom network down”, “risk of sending money to wrong recipient, “deleted SMS” “No ID”, “agent had no money”   |
| Q4. How are you dealing with any challenges that are brought by using M-PESA if any?   | “wait till system is back”, “contact customer car office”, “use other alternatives”  |
| Q5. What do you think is the overall impact of M-PESA to your industry?<br><i>Overall impact to the community and Kenya as a whole?</i>                | “Overwhelming”, “Easy to use”, “Cheaper”   |
| Q6. Considering everything, how satisfied are you with M-PESA? Would you recommend M-PESA to someone else? Have you recommended M-PESA to someone else | “Very satisfied”<br>“I have recommended”,<br>“You don’t need to sell it,<br>“You don’t really have to recommend to anyone”   |

*Figure 9 –Interview Questions*

#### *Coding Process and Analysis*

First, for the purpose of analyzing the response, the field responses are categorized in two ways. There is the direct response – based directly from the interview questions generating the themes from the participants. These responses are guided by the

theoretical framework which is diffusion of innovation. Secondly, there were indirect responses – based on the researcher’s analysis of the meanings from the entire research. The indirect responses include themes drawn from direct interviews, general observations, certain similarities of responses from different participants as well as literature review among other related issues during the research. It is important to note that the direct responses have been essential in coding the research analysis based on perceived characteristics of any innovation as per the diffusion theory. Therefore the following Codes were developed:

- a.) **O** – for **O**bservability
- b.) **R** – for **R**elative Advantage
- c.) **M** – **Co**mpatibility (sometimes known as triability)
- d.) **X** – **Co**mplexity

The codes were developed from the words from which they represent the diffusion of innovation theory. For example the letter **O** was derived from the word ***O**bservability*, The letter **R** was derived from ***R**elative Advantage*, the letter **M** came from *co**M**patibility*, and the letter **X** was derived from *Comple**X**ity*.

#### 1. Observability

This is the degree to which the results of an innovation are visible to others. Diffusion theorists believe that the observe-ability of an innovation, as perceived by members of a social system, is positively related to its rate of adoption. For M-PESA, it is clear that branding of Safaricom and the marketing power the company has within Kenya played a big role in enabling M-PESA to be visible. The establishment of several Safaricom agents found throughout the country is also a sign of physical presence of the company thereby making marketing and introduction of M-PESA products easy. There are no doubt that

majority of questions in the interview elicited responses which required the respondent to show a certain level of observing his/her environment. In making these observations, the questions were designed such that the answers provided aspects of change or transformation noticed or experienced by the respondent.

## 2. Relative Advantage

This is “the degree to which an innovation is perceived as being better than the idea it supersedes. The degree of relative advantage is often expressed as economic profitability, as conveying social prestige, or other ways”. Question number 2 (two) dealt directly with relative advantage. It asked “How has M-PESA brought a difference to your business?”. From the responses one can conclude that the question elicited great enthusiasm. The following positive statements show how the participants viewed M-PESA:

Answer B: Convenience! A lot of convenience

Answer C: It has made our work much easy!

Answer D: Overwhelming!

Answer E: O My goodness!

Having lived in Kenya, I was aware of the impact of small businesses to majority of Kenyans and the economy at large. The choice of this group also determined how the question could impact the result of M-PESA adoption based on the diffusion of innovation theory. According to the theory, the characteristic of the potential adopters may affect which specific sub dimension of relative advantage is important. The category of small business people therefore shows that a large part of the population has embraced M-PESA due to its relative advantage.

### 3. Compatibility

Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters. The more compatible an idea is, the less uncertain it is to the potential adopter and it's potential to fit more closely with the individual's situation. The M-PESA case presented a good testing ground for compatibility because of the unique banking situation in Kenya. As stated earlier, prior to M-PESA, many Kenyans were un-banked yet the social and community ties forced them to send money to relatives living upcountry. Many opted to use bus and courier services to fulfill their social and communal responsibilities. Clearly this choice was expensive, unreliable and time consuming. Secondly, the service was introduced after a good majority of users had tested mobile phone technology. So the adoption was not too hard to embrace. In 2004, after a relatively short period of mobile telephone being introduced in Kenya, there were over 2.5 million mobile subscribers. The table below (*Figure 10*) shows the extent of mobile subscribers in relation to the percentage of adults with bank accounts as well as mobile phone penetration and coverage in Kenya in 2004.

|       | No. of<br>mobile<br>subscribers<br>(2004) | Mobile<br>penetration | Adults with<br>bank<br>accounts | Mobile<br>population<br>coverage | Internet<br>access |
|-------|---|-----------------------|---------------------------------|----------------------------------|--------------------|
| Kenya | 2,546,000                                 | 7.9%                  | 10%                             | 70%                              | 1.3%               |

*Figure 10 – Mobile, bank account and internet usage in Kenya in 2004 (from The Enabling Environment for Mobile Banking in Africa by Porteus, D. (2006)*

### 4. Complexity

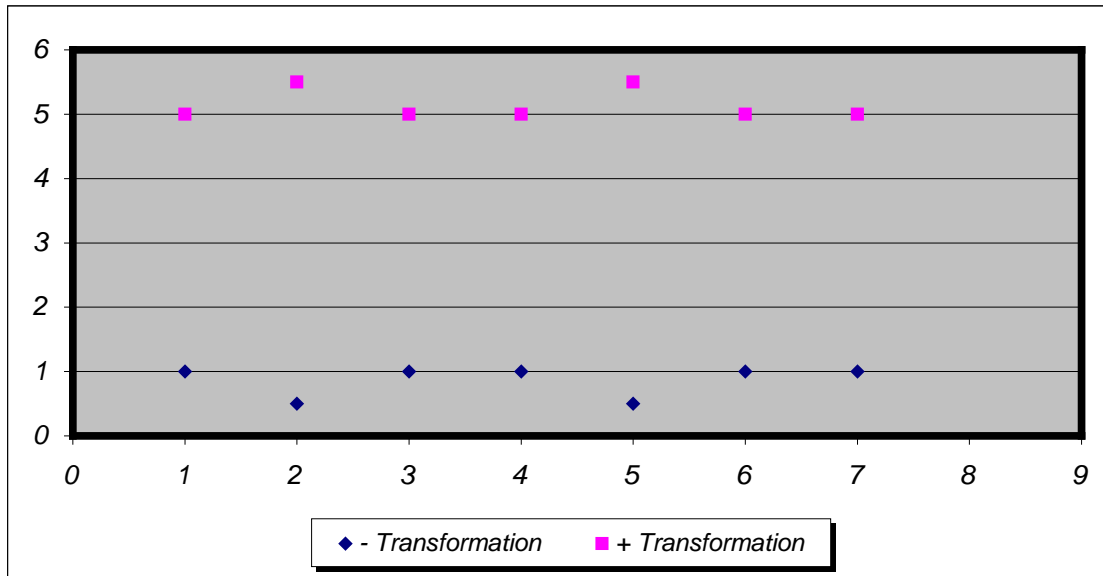
The degree to which an innovation is perceived as relatively difficult to understand and use is known as its complexity. The opposite of complexity is simplicity and for some new ideas, complexity is a very important barrier to adoption. During the survey, I

was looking for indications of the complexity of M-PESA but found only a limited number of complexities. The most common problem was the Safaricom network system. Many people experience and report that at certain times, the Safaricom network system would be down and inaccessible. Part of the reason is attributed to the fact that the system is overloaded because many people are using it at the same time. The best explanation for this system overload is the fact that the majority of Kenyans are paid salaries at the same time of the month. This means that the many transactions occur at the end of the month or during the weekend. Perhaps this is one of those unintended consequence of the M-PESA innovation which Safaricom has to address.

In analyzing the data, the idea of complexity was significant in determining the negative transformation M-PESA may have on the participant's lives and businesses. Through their responses from question (4) "How are you dealing with any challenges that are brought by using M-PESA if any? There were a few indications showing that indeed M-PESA had some negative transformation albeit very minimal.

Any response that denoted a negative impact acquired a value. Since there were a total of six direct questions, seven points were awarded to all participants. However, whenever a participant's response showed a negative transformation trait, a -1.0 point would be awarded to the negative column. If, within the same question, the participant showed that that M-PESA or Safaricom had addressed that negative transformation but the challenge is mostly attributed to the user, then only a -0.5 value was deducted. For example, Participant E mentioned that there are risks involved with M-PESA. He specifically stated it is possible to send money to the wrong person if you dial incorrectly. At the same time he indicated that in case someone has sent money by error to the wrong person, if the sender contacts Safaricom's Customer Care, they would stop the electronic

payment of that transaction and rectify the error. For this reason, the value of the negative transformation would not be -1.0 but -0.5 instead. Based, on this analysis, the emergent chart below (*Figure 11*) therefore represents the transformation responses from M-PESA users.



*Figure 11 - Weighted Transformation Responses*

To help in clarifying the transformation responses further, the following weighted table was developed based on the respondents' descriptions and experiences with M-PESA. The square dot represent positive transformation (+ Transformation) responses whereas the diamond dot represent negative transformation (- Transformation).

Clearly, it can be noted that there is indeed a significant gap between the responses with positive transformation and those with negative ones. Additionally, the graph shows that there is some correlation between the response values. For each person interviewed, whenever the gap is greater; it means that the individual experienced greater transformation from their previous business experience since adopting M-PESA as a transaction method in their business.

Hence, in terms of relative advantage based on diffusion theory M-PESA is transforming the individual. Furthermore, this explains why the code list as described in the figure below (*Figure 12*) has more Relative Advantage (R) values (six) than the rest of the codes in the list. The conclusions drawn from observability also show social transformations, language trends or shifts. As far as relative advantage is concerned, we can also draw conclusions based on direct M-PESA's direct advantage to the users. In terms of compatibility it is clear that the respondents observed increased social capital, money security for business partners and employees. Finally, the complexity of M-PESA was noted in terms of system challenges.

| <b>THEMES</b>      | <b>Respondents' Descriptions</b>  | <b>Code</b>                               | <b>Conclusions</b>   |
|--------------------|---|---|--|
| Observability      | Local community economic impact e.g. money circulation<br>Employment opportunity  | O<br>O-EC<br>O-EM                         | Social transformations,<br>language trends   |
| Relative Advantage | Increased Revenue<br>Convenience<br>Availability of more agents<br>Security   | R<br>R-RE<br>R-CO<br>R-AG<br>R-SE<br>R-EC | Direct advantage of M-PESA<br>to the user compared to other<br>banking services        |
| Compatibility      | Helping Family and friends<br>family, trust etc<br>Money Security for business<br>partners, employees   | M<br>M-SO<br>M-SE                         | Social capital, Money<br>Security for business partners<br>and employees, more profits |
| Complexity         | System down<br>Delays in payment<br>Incompatibility with other<br>options of payment<br>E.g. ZAIN, other banks<br>Effect on business revenue<br>e.g. no credit sales, M-PESA<br>rates | X<br><br>X-SY<br>X-DE<br>X-CO<br>X-RE     | Mainly challenges with<br>system.  |

*Figure 12 – Code List*



### *Access to Case study participants*

In her book *Gaining Access* (2003), Martha Feldman states that,

*Research design* and access issues are integrally related. Research design involves how you decide who should be your informants and whether you have the right ones, while *access* involves convincing the people you have decided should be your informants actually to give you the information” (p. 4).

There was no exception to that statement in this study. A certain criterion was developed and used in identifying prospective participants. The first criterion involved ownership of some kind of small business. All participants were chosen because they fitted and satisfied the research criteria of “small business”. Many of the interview questions were tailored toward people who had small business.

Secondly, participants were expected to own a mobile phone or have access to one for the purpose of their business. When mobile phones were first introduced in Kenya, it was common to find some registered mobile phone users in Kenya who were issued SIM cards but often did not have a personal handset. I did not expect a small business owner to have this challenge because mobile handsets have become affordable.

Thirdly, it was most important that the participant be a registered M-PESA user. As I found out, some potential participants turned out to be M-PESA agents and users simultaneously. They were included in the study because they provided unique familiarity to the product. However, during the interview, they were treated like any other small business owner.

Finding and accessing participants for the research was not difficult because there are many M-PESA agents spread across the cities and country. In some locations, it is not uncommon to find 3-5 agents within a radius of 1 kilometer. Before I went to Kenya, I

contacted some intermediaries who have been long time friends and acquaintances back in Kenya. I informed them about the project and requested that they organize access to participants who met the criteria. The response was very positive and I was able to find willing participants as soon as I arrived in Kenya. I contacted the prospective participants and arranged to meet them at a time and place of their choice. All seven interviews took place within three weeks.

All interviews went seamlessly except one where I experienced a challenge with regard to the location of the interview. A client, wishing to be hospitable to me, suggested that we hold the interview at a friend's office without letting the friend know that I was going to interview him. The friend's boss suddenly appeared to ask him a question but instead found strangers in his junior's office. He asked a few questions and interrupted our interview. He demanded to see the interview guide and after perusing it, we were allowed to continue the interview. Perhaps, this was the only time that I was interrupted while collecting data.

### *Identification*

To protect the identities of small business participants interviewed, their actual names have been changed. The interviewer's initials (TW) was been used for the purpose of recording the conversation in text.

Participant A: AARON (Interview date: July 30, 2010)

Aaron is in consulting business and design. They consult in the area of marketing, promotions and advertising. His small business helps clients package their services, their promotions and some elements of media management and events. He is also a client of ZAP – a mobile money transfer service provided by Zain Mobile Company. This means that whereas Safaricom is enjoying monopoly in Kenya at the moment, they also have

some competition albeit very limited. This was important for this study to uncover because it highlights the importance of pro-diffusion bias among other things. Further, the participant reiterated how M-PESA is building a continuation of the communal social capital. When asked about what he thinks of the overall impact of M-PESA to the average Kenyan, he had the following to say:

AARON: Overwhelming!

TW: Overwhelming... What do you mean? Can you explain?

AARON: You see, let me give an example on how I deal with my family especially. My family is scattered across Kenya but we are still very communally oriented and so we support those who are less privileged. And that being the case it means that I support my parents who live upcountry. As well I have a sister who works almost 700 kilometers from Nairobi in a very remote area where she does not have access to a bank or an ATM. If she runs out of cash and she asks me for money on the instant I can send her cash without having to leave my house as long as I have money in my M-PESA account. This scenario is replayed across the thousands or millions of people who are registered as M-PESA users.

He continued to explain further:

AARON: Even friends by the way. And the other thing I must say is that M-PESA is to us is what the credit card is to those who live in the West. Because there are a number of transactions as well that you can carry over the counter at different vendors, I think M-PESA is great.

TW: Give me examples please.

AARON: I can go into a restaurant and I order food and I discover that I did not have enough for whatever reasons and they will accept payment via M-PESA.

Participant B: BRENDA (Interview date: August 03, 2010)

Brenda is a young college educated woman in her thirties. She has been in small business as a tailor and small scale designer. She also uses her design and tailoring knowledge to train others. She charges her students a small fee for the training and they even pay their fees using M-PESA. Additionally, she is a person with disability and used to rely a lot on the public transportation system to conduct her financial transactions. Prior to the introduction of M-PESA, it would take her hours to get to the bank due to her disability. Asked about how M-PESA has made a difference in her life she had the following responses:

BRENDA: Convenience. A lot of convenience

TW: Can you explain that

BRENDA: Number one is that you can get your cash easily...Easy access to your cash. I don't have to think about going to the bank. I can get cash in the estate.

TW: Where you live?

BRENDA: Accessibility is perfect. It's also good for the clients because now they can deposit the money in your M-PESA account

Participant C: CYPRIAN (Interview date: July 30, 2010)

Cyprian is a man in his late thirties. He has operated several small businesses in the city of Nairobi for over ten years with a mixed degree of successes and failures. He is an agent for Safaricom and uses M-PESA to transact his business. To supplement his income, this participant also works as a caretaker for a landlord. One notable transformation brought about by M-PESA for this participant was the fact that the banking charges related to his business have significantly reduced. As an agent of Safaricom who not only sells airtime but also mobile handsets, he used to be paid

commission through cheques. When, asked how he did his business before the introduction of M-PESA, he had the following responses:

CYPRIAN: We used to bank in the account then we withdraw the money and deposit it in Safaricom account and then purchase airtime. Now basically that is what we used to do.

TW: So you used banking...Pure banking... old fashioned banking?

CYPRIAN: Yes we used pure banking...old fashioned banking... You go to a bank. You bank. Then after banking you confirm with the branches. We get a bankers' cheque. Then we buy airtime.

Additionally, the participant noted that M-PESA has made his work much easier by enabling his business to penetrate into a wider market. Therefore, we can conclude that there is also a clear indication from the participant showing that M-PESA has eliminated transportation challenges which previously existed.

TW: How has M-PESA brought a difference to your business...?

CYPRIAN: When M-PESA was introduced, one – it has made our work much easy.

TW: What do you mean by that?

CYPRIAN: In that most of our branches are in the interior where they cannot access banking facilities. Banking facilities are far from where our outlets actually are and it was risky.

TW: So you are saying that they are still banking but now they...or before that they were... they used to go to the bank.

CYPRIAN: They used to go to the bank but normally, for majority of our branches, banks are not near where they are, so they have to maybe go with a

motorbike or take public transport to take money to the bank so that we can access the money. So it has made our work easier

Participant D: DOREEN (Interview date: July 31, 2010)

Doreen is also a young woman in her late twenties. She operates as an agent of Safaricom in a small shop found in a busy Nairobi suburb. Her shop is in a semi industrial area where there are also residential houses. She also owns a smaller shop in the rural hometown in Western Kenya. Before M-PESA was introduced, she used to rely on a risky way of using couriers to send “money” in parcels to her rural shop which she also operated as a Safaricom agent. Now she relies on M-PESA for a lot of her transactions. She narrates her transformation as follows:

TW: OK, apart from revenue, what is the other difference it has brought to your business?

DOREEN: Yes, increased revenue.

TW: What else?

DOREEN: There are things we are able to do faster than we used to do before?

TW: You mean it is faster to do things?

DOREEN: Speedy... yes! For example when I have some money I need to send to somebody. I do salaries for the people upcountry who don't have bank accounts. We send direct to their phones. And it's an instant!

TW: So you pay them by M-PESA? You pay their salaries by M-PESA?

DOREEN: Yes, I even send rent by M-PESA

Participant E: ENDELEA (Interview date: July 31, 2010)

Endelea is in low cost block-making construction for low-cost users. He also owns a taxi and has employed two drivers with whom he communicates with using his mobile

phone. Due to the nature of his small businesses, he uses M-PESA to transact business a lot. There were three noteworthy responses from this participant. The first was related to the risks involved with M-PESA. From the interview, it was clear that he was very satisfied with M-PESA. On the question of how M-PESA has brought a difference he responded:

ENDELEA: Oh my goodness! So you find that the transfer of money is very...very fast. To me I think that it's a great when transactions are much faster. For example, right now I have somebody who wants us to do work for him and he has just transferred money and work can go on without disruption.

TW: Is there increased revenue now because of the fact that you are using M-PESA?

ENDELEA: Yes. One, people are able to make quick decisions because the difficulties of "how will I get money, how will I send you the money" does not arise.

Participant F: FESTUS (Interview date: August 10, 2010)

Festus is perhaps one of the most successful small business people I interviewed. His small business impact can be felt as he employs a staff of eight people who work with him in his small business venture. After, he completed his computer degree, he returned to his home town of Kisumu in search for a job but could not find one. Festus joined with two others like him and decided to open a small start up computer training school. His start up involves teaching basic computer skills in a slum area in Kenya. He has about forty students per week and uses M-PESA a lot. The students pay their fees using M-PESA his casual staffs receive their pay using M-PESA. He has also incorporated M-

PESA to pay and buy items that he uses daily in the business and at his home. Here is how he describes the difference M-PESA has brought:

FESTUS: For us it is one way of really cutting down costs on transport, wasting time, on movements or even arguments. I noticed now that my mother is 80 years old. And I am sending her money through M-PESA. And she knows how to use M-PESA as she goes to the M-PESA shop in the rural area. So it helps family members! Before, I either had to go home or send someone. Also, I have noticed that for my children, I am paying their fees through M-PESA. I pay the shopkeeper using M-PESA, paying debts, buying things...

Asked about the challenges of M-PESA, he noted that one of the challenges is not being able to use M-PESA between different network providers in Kenya. Perhaps, this was an indication that there is an opportunity for mobile banking regulators to improve M-PESA. I should note that due to competition among mobile network providers, this challenge may take a long time to overcome.

Participant G: GRACE (Interview date: August 11, 2010)

Grace owns a small kiosk – known in Kenya as “*duka*” where she sells cigarettes, soda, bread and airtime among other items needed by her clients. While she notes that M-PESA has brought positive business through the majority of her clients, one of the major effects of M-PESA is that she no longer sells as much airtime as before. This is due to the fact that most of her clients who use M-PESA have resorted to topping up their airtime using M-PESA funds from their accounts instead of coming to buy airtime directly from her store. According to her estimates she used to sell over 100 airtime package per day and now she barely sells 40. This is perhaps one of the few negative impacts of M-PESA on a small business owner.



TW: What other advantage or impact has M-PESA brought to your business?

GRACE: What I can talk about M-PESA is: Sometimes, we are not happy.

Because for some credit. I used to sell a lot of credit. I used to sell about 100 pieces for 100/- (approximately CAD \$ 1.50) But nowadays it has reduced. Now I sell only 40. (approximately CAD \$ 0.50)

TW: Why?

GRACE: People are buying from M-PESA and they affect us.

According to me, with M-PESA credit sales have gone down. You know those big people, they use to buy 2000/- or 1000/- shillings worth of credit.

(Approximately CAD \$25.00 or CAD \$ 12.50 respectively) They would call me to send them credit. Now they buy through M-PESA

TW: So that has impacted your business

GRACE: Yes!

At the beginning of the case study research, I had hoped that the research findings will highlight the benefits of the communication technology brought by mobile phones to Africa. This has been confirmed and surpassed. For example, the confirmation of accessibility brought about by such a communication tool as a mobile phone, an increase in the speed of transacting business locally for small business as well as numerous unintended consequences. As James Ewing (2007) notes in a *Bloomberg Business Week* article titled “Upwardly Mobile in Africa” (September 13, 2007), M-PESA usage by small business owners has shown that “mobile phone technology can dramatically improve living standards by saving wasted trips, ... and even serving as a conduit to banking services”.

This fact is made, even confirmed by the way that major banking institutions have embraced M-PESA by assimilating the product into theirs. The emergence of M-KESHO accounts whereby M-PESA accounts have now been transformed into bank accounts show that banking institutions are critically following the transformation effects of M-PESA. “This is a bank account introduced by both Equity and Safaricom where customers can earn interest from as little as Ksh1. Customers can withdraw cash from their Equity Bank Account to their M-PESA accounts” (Retrieved June 01, 2010 from the company’s website: <http://www.safaricom.co.ke/index.php?id=250>)

The Kenyan media has also kept the public updated with M-PESA developments by reporting every milestone. It began in April 2007 when *The Standard* reporter James Ratemo (2007) and other media outlets announced that Kenya had unveiled M-PESA. The controversy and challenges that surrounded the beginnings of M-PESA were also hot topics covered by the Kenyan newspapers such as *The Daily Nation* in December 9, 2008 titled, “Michuki: Probe cash transfer” whereby the government of Kenya was under pressure to audit M-PESA because of fears from regulators. In the same week, *The Standard* reported through an article “Unmasking the Storm behind M-PESA” by Njiraini J. and Anyanzwa, J that the government had bowed to the pressure of the Central Bank of Kenya and was to conduct a full investigation on M-PESA. At that time, M-PESA served almost 4 million subscribers according to the report.

Media exposure to M-PESA continues to the present with articles such as “Equity Bank, Safaricom unveil product for the un-banked” by Kamau, M. (2010) describing the Safaricom’s partnership with Equity Bank had unveiled M-KESHO. In it, Kamau notes that M-KESHO “...will enable M-PESA customers to open savings accounts where they

will be able to transfer as little as Sh.100 at no cost” (*The Standard Online*, May 18, 2010, paragraph 5).

In the following section, we shall further discuss specific outcomes identified by study participants in which M-PESA has brought transformation to them. These include areas in their business such as transportation, ease of transaction and money circulation, their own safety and business security as well as overall social capital.

## **Transformation Discussion**

At the beginning I have looked at the concept of transformation during our discussion on the objectives of this study. I made reference to the many perspectives of transformation within different disciplines. From an innovation technology perspective I referenced o Roger's (2003) view on the fact that transformation could be either be positive or negative. For this section, we shall focus on the recognizable traits of transformation based on the study respondents. In general, these traits show that there were structural shifts and adaptations by small business users of M-PESA and by extension to those that they influence – the public at large.

These shifts can be seen in business environments. For example, there is an increased culture of trust by literally all the traditional banks that have opened up their doors to people of low income statuses because of the positive competition brought by M-PESA. The service has also seen an increased acceptance by many formal institutions since its inception. For example, payments of bills and school fees have become a normal M-PESA transaction activity. Most government agencies and institutions have accepted M-PESA as a valid form of payment. Additionally, in terms of adaptation, there are now new ways of delivering financial services through banks; new banking and mobile products associated with or competing against M-PESA. All these shifts and adaptation are solutions to common problems that existed before M-PESA which are being enjoyed by the small business M-PESA users.

### *Transportation and Convenience*

Kenya's small business transactions relied heavily on public transport before M-PESA. However, to exchange money using local infrastructure has been, and still is, a challenge due to the poor nature of roads, railway and other transport networks in Kenya.

Like any emerging economy, people travel far from home to find work and do business. They then need to make remittances to businesses for the goods and services they received and to support their families back home. . This used to be done in a risky manner through many unregulated, expensive and long trips. Thanks to M-PESA this is no longer the case. The users reported significant reduction of costly trips in the course of doing their business as compared to the past days before M-PESA came into the market. Nairobi businessmen in particular, can attest to the traffic jams that result in enormous loss of time as they try to get to their bank, order or pick up goods for their customers. There is no doubt that the effects of such small scale business savings are then passed on to their customers and the larger community.

#### *Ease of Transaction and Money Circulation*

The majority of business people interviewed in this project confirmed that M-PESA has improved the ease with which they money is exchanged because it is faster than any previously used methods. The many M-PESA agents scattered all over Kenya is proof that there was need for people to exchange money but the traditional methods were inadequate.

Furthermore, M-PESA has freed time allowing business people to concentrate on improving and diversifying their businesses to become more efficient and competitive. . Most small business people interviewed acknowledged that there was increased revenue in their businesses as a result of M-PESA. This translates to greater capital accumulation and for some, business expansion.

#### *Safety and Security*

Like in any other country, many Kenyan small business owners have to be concerned about safety and security. First, as a good storage format where the money is kept

electronically in one's mobile phone instead of cash, every businessman interviewed stated that they now feel that their money is safer and more secure in their M-PESA account than previously. Accordingly, it can be seen that M-PESA serves two purposes. The first advantage is protecting the small business person from being attacked by robbers in case he/she is carrying cash hence it is a form of physical security deterrent.

The second advantage is that it acts as a storage format. It should be noted that Safaricom does not charge M-PESA users for storing money in their account. Despite the limited amount allowed (at the time the research was done) in M-PESA accounts, Kshs 70,000 /- (Approximately CAD \$ 815.00), many users are extremely happy about it and use this account as a savings/credit source. Therefore, it can be argued that M-PESA has dealt with some of the prior challenges facing small and medium businesses such as lack of credit (including introduction of M-KESHO). Additionally, as a small business people, the temptation to put the money in a different unintended use is averted. As Participant A acknowledges:

AARON: Compared to cheques. I think there is nothing that beats it. And again on the other hand, when you have it in M-PESA, it is a good storage format as well compared to receiving hard cash which is always a temptation to redirect the money into something that might not be useful. So if you have it in M-PESA, before you can use it, you have to think about it. Meaning you have to actually get to an M-PESA agents to obtain cash. It's better that way. You have it but again, you don't have it.

TW: When you say good storage format, is it because you feel that you can easily be tempted to use that money somewhere else, or is it that it is also safe that you don't have money which somebody can steal from you?

AARON: Exactly, in that regard, both of those questions are well answered.

Apart from the fact that M-PESA has several conveniences, it has replaced cash payments and many of the participants interviewed reported using it as an alternative to pay for various items. According to Safaricom website, the option M-PESA as a replacement of cash payments has been embraced by thousands of Kenyans including small business people. Many companies and institutions currently accept it as a form of payment and specific ones are listed on the company's website. They include many educational and financial institutions, government agencies, health providers, businesses in hospitality industry, insurance agencies, media houses and companies, non-governmental organizations, churches and societies, transport providers as well as utility providers.

### *Social Capital*

Socially, M-PESA has also brought new language, e.g., “M-PESAD” “M-PESA me” meaning I have received an SMS notifying me that someone has sent me money or will send me money. Another common one is ‘I’ll M-PESA you’ meaning I shall send it via M-PESA.

Since people are also able to help their relatives and contribute to society in more efficient ways M-PESA acts as an accelerator. Many people in Kenya find their identity through helping close relatives and communities. As I have noted while discussing transportation effects, many people who work in the urban areas often send money back to their relatives in the rural areas for many reasons. One of the reasons is to identify with these communities. I believe that M-PESA contributes significantly in making people strengthen their social bonds and identities. While discussing identities in a journal article

“Communities of practice and social learning systems”, Wenger, E (2000: p.239) asserts that,

Navigating the social landscape defined by communities and their boundaries requires a strong identity...A strong identity involves deep connections with others through shared histories and experiences, reciprocity, affection and mutual commitments. (Wenger: 2000, p. 239)

Through M-PESA, small business users who form a large part of the Kenyan social landscape fulfill the mutual commitment as well as shared experiences and hence this shows how transformation is happening.

In the case of M-PESA, we can conclude that transformation seemed to have occurred in three distinct ways. The first aspect is noted on the participant's business through increased revenue and business. The second transformation, a function of the first one, is improved lifestyles of users and their loved ones. The third effect is on the socio – economic status of their community and by extension the larger Kenyan society. All these observations were made and recorded within a substantially short period of time beginning from the time M-PESA was introduced in Kenya in 2007 to the time of the study in the months of July and August 2010. It is clear that rapid adoption and frequent use of M-PESA brought about positive outcomes for small business people in Kenya and by extension their communities.

There is also no doubt that it has brought some unintended consequences. The first unintended consequence was noted by all the participants. The fact that M-PESA was embraced by millions of users; it has become a challenge for the network provider – Safaricom in terms of user volumes. Many users have experienced delays due to the M-PESA system being down or slow on weekends and especially at the end of the month



when many employed Kenyans get their pay. The other specific unintended consequence was mentioned by a participant who realized diminished returns on her business because people are no longer buying pay-as you go top up credit used for the regular use of mobile phones. This is because they have resorted to M-PESA to top up their phones. While this may not affect the majority, it certainly affected the many Safaricom agents who relied on selling calling cards for Safaricom users.

I believe that transformation by the M-PESA phenomenon shall continue to be a part of the Kenyan landscape until such a time that a disruptive technology is introduced. M-PESA has created an enabling environment to broaden access to financial services and regulators need to continue to work with Safaricom as well as other competitors to ensure that the user benefits further. For example, the monopoly enjoyed by Safaricom can be reduced if other competitors are encouraged to get into the mobile- money market. In addition, incentives such as regulated rates would help.

Finally, I believe that the results of this study are crucial to informing decisions of many stakeholders. For example, investors in mobile technology would utilize the results to enable them make confident decisions about the mobile market in Kenya based on the trends from this study. Policy makers could also utilize the study to make decisions on mobile technology infrastructure. Small business owners will also benefit from the study by identifying aspects of the innovation in which other business owners have exploited to their advantage. They can also be reassured that their contribution to the Kenyan economy is crucial. The research also forms a basis for further innovation and change for the small business/mobile technology industries in Kenya and beyond. In addition to technological change there should be more competition and options for small business owners other than M-PESA.

## Conclusion

This case study proposed to investigate the usage of M-PESA and the success of small business owners in Kenya using diffusion of innovation theory. The study has effectively used the traits of diffusion theory such as observability, relative advantage, compatibility and complexity to showcase how this pay-as-you-go charging model is transforming small businesses in Kenya. The study has used a theory testing approach to confirm the existence of transformation effects of M-PESA. In his book, *Research Design and Social Research* (2001), David de Vaus explains that:

“...theory testing approach begins with a theory and uses theory to guide which observations to make; it moves from the general to the particular. The observations should provide a test of the worth of the theory.” (de Vaus, D. 2001, p. 6).

In the case of this research, we started with the diffusion theory traits using deductive reasoning in a conceptual–abstract level to a more empirical level of interviewing M-PESA users, recording their responses and analyzing it in a systematic manner. I have also focused on the transformation as a concept related to the M-PESA innovation. Only time shall tell whether the desired transformation has taken root in Kenya and the surrounding nations. Nonetheless, based on the observations of this research, M-PESA is making significant transformation at least within Kenya.

The figure below (*Figure. 13*) from de Vaus (2001) book illustrates the logic of the process which includes the transformation concept.

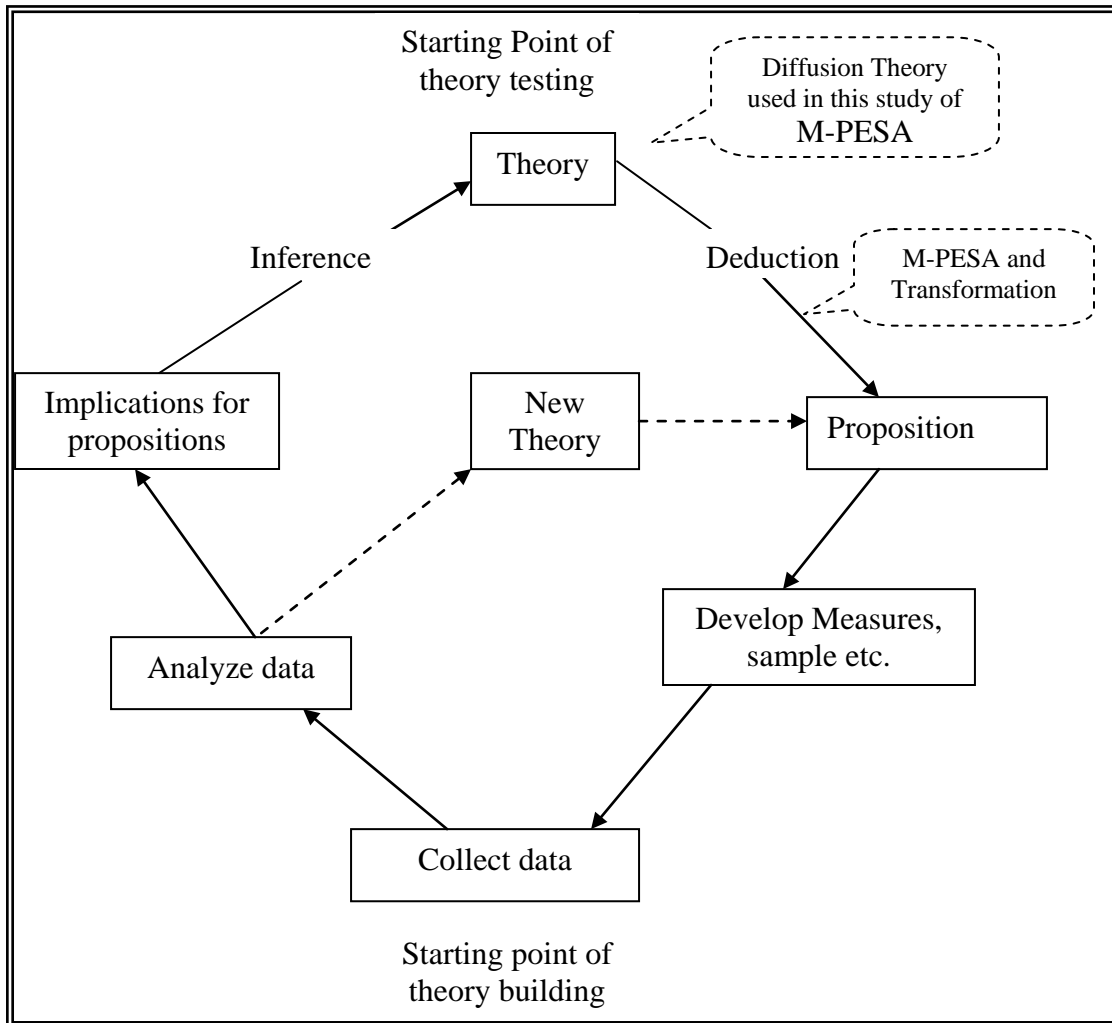


Figure 13– The logic of research process from de Vaus, D. (2001, p. 8)

In addition, using authoritative literature review, the study drew a clear picture of how M-PESA works and its evolution in Kenya by referencing on the effects of increased mobile subscriptions in Kenya. In terms of its history and evolution, I made a brief reference to Winston’s theory of supervening necessity. Due to the previous disadvantages in Kenya suffered by small business people in terms of accessing financial systems, the model was appropriate in explaining M-PESA’s evolution and current state.

The research in this study was conducted through interviews done in Kenya thereby legitimizing its validity. The valuable responses and thoughts of selected small business participants were coded, and analyzed. The glaring results from these analysis point

toward a major theme - transformation. Indeed participant responses indicate that M-PESA has been embraced by traditional banking institutions as well as its' increasing millions of users. It is only a matter of time before the M-PESA phenomena becomes a normal and acceptable way of life in other parts of Africa.

## References

- Akman, K. (2008). Ambiguities of social transformation: A critical framework for the concept. *Journal of US-China Public Administration*, 5 (6) 43, 23-26
- Alliance for Financial Inclusion (2010). Case Study: Enabling mobile money transfer. The Central Bank of Kenya's treatment of M-PESA. Retrieved December 01, 2010 from <http://www.afi-global.org/>
- Anyanzwa, J. & Njiraini, J. (2008, December 08) Unmasking the storm behind M-PESA. *The Standard*.
- Porteous, D: Bankable Frontier Associates (2006). *The enabling environment for mobile banking in Africa* (DFID Report May 2006)
- Camner, G, Pulver, C and Sjoblom, E. (2009). What makes a successful mobile money implementation? Learnings from M-PESA in Kenya and Tanzania. *GSMA Mobile Money for the UnBanked*. Retrieved January, 28, 2010 from <http://www.gsm.org/>
- Communications Commission of Kenya (2010). *Quarterly Sector Statistics Report by the Communications Commission of Kenya*. (First Quarter July –September 2010.2011) Retrieved August 01, 2010 from [www.cck.go.ke](http://www.cck.go.ke)
- Consultative Group to Assist the Poor, (2008). *Banking on Mobiles: Why, How, for Whom?* (Focus Note No. 48), Washington DC. Mas, I., & Kumar, K.
- Consultative Group to Assist the Poor. (2009). *Going Cashless at the Point of Sale: Hits and Misses in Developed Countries* (Focus Note No. 51), Washington DC: Mas, I. & Rotman, S.
- Consultative Group to Assist the Poor. (2009). *Window on the Unbanked: Mobile Money in the Philippines* (Brief) Washington DC: Pickens, M.

- Consultative Group to Assist the Poor. (2009), *Poor people using mobile financial services: Observations on customer usage and impact from M-PESA*.(Brief)  
Washington DC : Morawczynski, O. & Pickens, M
- Crowley, D & Heyer, P.(2007), *Communication in history. Technology, culture, society*.  
Fifth edition. Pearson, Allyn and Bacon Publishers: Boston
- De Vaus, D. (2001). *Research design and social research*. Sage Publications Inc:  
London
- Drucker, P. F. (1994). The Age of Social Transformation. *The Atlantic Monthly*, 274(5),  
53-80
- Economist, The. (2009, September 24). The power of mobile money. Retrieved from  
[http://www.economist.com/node/14505519?story\\_id=14505519](http://www.economist.com/node/14505519?story_id=14505519)
- Ericsson (2011). Ericsson Money Services brings connected mobile money to Europe  
Retrieved from [http://www.ericsson.com/news/110608\\_money\\_244188810\\_c](http://www.ericsson.com/news/110608_money_244188810_c)
- Ewing, J. (2007, September 13). Upwardly mobile in Africa. How basic cell phones are  
sparking economic hope and growth in emerging – and even non-emerging –  
nations. *Bloomberg Business week*. Retrieved from  
[http://www.businessweek.com/magazine/content/07\\_39/b4051054.htm](http://www.businessweek.com/magazine/content/07_39/b4051054.htm)
- Feldman, M (2003), *Gaining Access. A practical and theoretical guide for qualitative researchers*. Altamira Press: New York
- Graham, F (2010). M-PESA: Kenya's mobile wallet revolution (BBC) retrieved from
- Gray, V (2005). "The un-wired continent: Africa's mobile success story",  
Retrieved from <http://www.itu.int/ITU-D/ict/papers/index.html>
- Hughes, N & Lonie, S. (2007). M-PESA: Mobile Money for the Un-banked",  
*Innovations, winter & spring*, pp.63-81

- Jack, W. & Suri, T. (2010). The Economics of M-PESA. MIT Sloan School of Management. Retrieved from [www.mit.edu/~tavneet/M-PESA.pdf](http://www.mit.edu/~tavneet/M-PESA.pdf)
- Kamau, C. & Rutland, A. (2005). The global 'order', socioeconomic status and the economics of African identity. *African Identities*, 3 (2), 171-193
- Kamau, M. (2010, May 10). Equity Bank, Safaricom unveil product for the unbanked The Standard Online. Retrieved from <http://www.standardmedia.co.ke/>
- Kangwagye, S. (2009. March 10). MTN Mobile Money transfer service now available throughout Uganda. MTN Press Office online. Retrieved June 15, 2010 from <http://on.natgeo.com/qbJiLW>
- Karago, C. (2010, December 2009 – February 2010). A lifeline of water. *The Option*, 12-15
- Kilele, K.M (2009). Kenya: Facts and Figures - 2009. *Kenya National Bureau of Statistics Report*. Available from [www.knbs.go.ke](http://www.knbs.go.ke)
- Leishman, P. (2009). M-PAISA: Zahir Khoja Describes the Challenges and Opportunities of Launching Mobile Money in Afghanistan. *Mobile Money for the Unbanked*. Retrieved from <http://mmublog.org/blog/m-paisa-zahir-khoja-describes-the-challenges-and-opportunities-of-launching-mobile-money-in-afghanistan/>
- Littlejohn, S. W. & Foss, K.A. (2005) Theories of Human Communication. Eight Edition. Thomson Learning Inc: Toronto
- Mas, I. (2009) The economics of branchless banking,” *Innovations*, 4(2), 57 -76, MIT Press
- Mas, I & Morawczynski, O. (2009). “Designing Mobile Money Services: Lessons from M-PESA,” *Innovations*, 4(2), 77-92, MIT Press

M-PESA. (n.d.). In Safaricom-M-PESA. Retrieved from

<http://www.safaricom.co.ke/index.php?id=250>

Nation Media Group. (2009, December 09). Michuki: Probe cash transfer. *The Daily Nation*

Odhuno-Were, T.R, (Odhuno-Were, T.R). Interviews: How mobile technology has transformed small business in Kenya: A case study of M-PESA users (July and August 2010)

Omwansa, T. (2009).M-PESA: Progress and prospects. *Innovations Mobile World Congress, 2009*. pp 107-123

Pyler, M, Haas S., & Nagarajan, G. (2010). Community level economic effects of M-PESA in Kenya. Financial Services Assessment. Iris Centre University of Maryland. Retrieved from <http://www.fsassessment.umd.edu>

Ratemo, J. (2007 April, 04). Kenya unveils new mobile money transfer service. *The Standard*. Retrieved from <http://www.standardmedia.co.ke/news/InsidePage.php?id=2000027407&cid=14&>

Rogers, E. (2003). Diffusion of innovations. Fifth Edition. Free Press: New York

Sagentia. (2007). Mobile banking aids economic growth *The Gen*. (Autumn 2007)  
Retrieved from [www.sagentia.com](http://www.sagentia.com)

Silverman, D. (2005) Doing qualitative research. Second Edition. Sage Publications: London.

Transformation. (n .d.). In *Wiktionary Encyclopedia online*. Retrieved from <http://en.wiktionary.org/wiki/transformation>



Wanjohi, A (n.d.) Challenges facing SME's in Kenya. Retrieved from  
<http://www.buzzle.com/articles/challenges-facing-smes-in-kenya.html>

Wenger, E. (2000). *Communities of practice and social learning systems*. Organization  
Volume 7 (2): 225–246 SAGE: London

Williams, R. (1974). *Television: Technology and Cultural Form*. Fontana: London

Winston, B. (2000). *Media technology and society. A history: from the telegraph to the  
internet*. Routledge: London.

Yin, R. K. (2003). *Applications of case study research*. Sage Publications: Thousand  
Oaks

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## Appendix 1



How mobile technology has transformed small business in Kenya: A case study of M-PESA small business users.

### INTERVIEW GUIDE

**Name of Participant** \_\_\_\_\_

**Phone Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Business type:** \_\_\_\_\_

**Interview Venue:** \_\_\_\_\_

**Date of interview:** \_\_\_\_\_

**Time of Interview:** \_\_\_\_\_ AM/PM

**Participant's Signature:** \_\_\_\_\_

**Researcher Signature:** \_\_\_\_\_

**Admin Code:** \_\_\_\_\_

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.

Q. 1. Would you please explain how you did your business banking before being introduced to M-PESA? (*observability*)

Q2. How has M-PESA brought a difference to your business? (*Relative advantage, impact*)

Q3. In terms of usage, what are the a) Banking and b) Communication challenges you had before using M-PESA that do not exist anymore? (*Compatibility*)

Q4. How are you dealing with any challenges that are brought by using M-PESA if any?

Q5. What do you think is the overall impact of M-PESA to your industry? (*Complexity, comparison*)

Q6. Considering everything, how satisfied are you with M-PESA? Would you recommend M-PESA to someone else? Have you recommended M-PESA to someone else? (*Relative advantage*)



## Appendix 2



### Information Letter

Dear Mr/Ms/Mrs/

---

My name is Todd Odhuno Were. As part of my requirement to complete my degree at the Faculty of Extension, University of Alberta- Edmonton, Canada, I am conducting a case study research on the usage of M-PESA by small business people in Kenya. I shall be the principal researcher under the supervision of Dr. Marco Adria. On my behalf and the University, it is my honour and pleasure to invite you to participate in this project.

As a participant, you have been selected because you are a user of Safaricom's M-PESA. Through this project, I hope to collect information about how M-PESA has transformed lives in any way. The research is being conducted for academic purpose only and the findings shall not be used for any commercial purpose.

The data collected from you shall be through an interview. I expect the interview to take approximately one hour. Please note that I shall use audio/video recorders during the interview for research purposes only. All data collected shall be kept confidential and your privacy will be respected.

You have the right to opt out of the research anytime during the interview or within two weeks after the interviews are completed by contacting myself or my supervisor, Dr Marco Adria. You may also contact the University of Alberta at the contacts listed at the end of this letter.

Additionally, you are entitled to the following rights:

- a.) To not participate
- b.) To withdraw at any time or by a specified time without prejudice to pre-existing entitlements, and to continuing and meaningful opportunities for deciding whether or not to continue to participate
- c.) To opt out without penalty and to have any collected data withdrawn from the data base and not included in the study. Should you decide to withdraw, any recordings or transcripts will be destroyed and shall not be used as part of the research findings.
- d.) To privacy, anonymity and confidentiality

e.) To safeguards for security of data (data are to be kept in a secure place for a minimum of 5 years following completion of research project) and when appropriate destroyed in a way that ensures privacy and confidentiality.

f.) To disclosure of the presence of any apparent or actual conflict of interest on the part of the researcher(s).

g.) To a copy of a report of the research findings? How will participants indicate an interest in receiving such materials?

I wish to sincerely thank you for your participation and look forward to working with you.

Sincerely yours,

Todd Odhuno – Were – Principal Researcher  
3434 McKay Lane,  
Edmonton, Alberta, Canada T6W 1L5  
Tel: +1780-708-2811  
Email: [odhunowe@ualberta.ca](mailto:odhunowe@ualberta.ca)

Copy: Marco Adria, PhD – Research Project Supervisor  
Associate Professor, Faculty of Extension – University of Alberta  
Director, Master of Arts in Communication and Technology  
Enterprise Square - 10230 Jasper Avenue  
Edmonton, Alberta, Canada T5J 4P6  
Tel: +1780- 492-2254  
Email: [marco.adria@ualberta.ca](mailto:marco.adria@ualberta.ca)

Acknowledged and Signed by Interviewee:

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The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.

### Appendix 3



#### Consent Letter

I \_\_\_\_\_ willingly consent to participate in a case study research conducted by Mr. Todd Odhuno Were from the University of Alberta. I understand that the case study research is on the usage of M-PESA by small business people in Kenya. I fully understand the purpose of research and identity of principal researcher as being a student from University of Alberta.

I consent to the following rights:

To not participate or participate willingly

To withdraw at any time up to and including 14 days after the interview without prejudice to pre-existing entitlements, and to continuing and meaningful opportunities for deciding whether or not to continue to participate in the research.

To opt out without penalty and to have any collected data withdrawn from the data base and not included in the study up to and including 14 days after the interview. In the event of opting out, written transcripts will be shredded and disposed for confidentiality reasons. Any audio or video tapes shall also be physically destroyed and shall not be used for research analysis

To privacy, anonymity and confidentiality

To safeguards for security of data (data are to be kept in a secure place for a minimum of 5 years following completion of research project) and when appropriate destroyed in a way that ensures privacy and confidentiality.

To disclosure of the presence of any apparent or actual conflict of interest on the part of the researcher, Mr. Todd Odhuno-Were

To a copy of a report of the research findings at my request through email, postal mail or telephone request.

I have the right to view a copy of the report of the research findings. I understand that data collected from myself shall be kept in for 5 years and destroyed in a way that ensures privacy and confidentiality.

I fully understand that the research findings may be used for research articles, presentations, teaching, and web posting.

I fully understand that have a right to privacy and confidentiality. I fully understand that my personal information shall not be revealed.

I am fully participating in this research with the full knowledge that there are no existing presence of any apparent or actual conflict of interest on the part of the researcher, the product M-PESA, and myself.

I have been provided with a signed copy of this consent letter for my records.

Date: \_\_\_\_\_

Full Name: \_\_\_\_\_

Contact (Address or Tel No): \_\_\_\_\_

Signed: \_\_\_\_\_

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.

## Appendix 4

### *. Sample Email Correspondence*

(Names have been changed to protect identity)

#### *a) Interview Request 1.*

Dear Todd

Thank you for your interest in our Company. [REDACTED] is a young company already making significant impact in the industry.

We currently do not use M-PESA for our service though we are creating the framework to use it in the next few months.....

For the interview, just give me a call on [REDACTED] when you are in Kenya

All the best in your studies

David [REDACTED]  
[REDACTED]

----- Original Message -----

Subject: Request for an interview

From: [odhunowe@ualberta.ca](mailto:odhunowe@ualberta.ca)

Date: Thu, June 17, 2010 12:05 pm  
[REDACTED]

Hello,

My name is Todd. I am a Kenyan student in Canada and am conducting research on the usage of M-PESA by small businesses in Kenya. I found your address from the SME website (<http://kenya.smetoolkit.org/kenya/en/>) I am pleased with what you are doing as part of creating employment for Kenyans. I am especially pleased that you are working within the IT field. I would like to interview you for an hour as part of my academic research in communications and technology.

This research is part of my requirement to complete my degree in from the University of Alberta. If this is okay with you, I can arrange for an appointment during the month of August when I shall be in Kenya. Kindly let me know if you have used M-PESA and is available for an hour.

I hope to hear from you.

Wishing you the best.

Thank you in advance.  
Sincerely,

Todd Odhuno-Were

## Appendix 5

*Interview Request # 2.*

Hi Todd!

It was interesting to get and read your mail. I definitely use M-pesa. As a business person it kind of becomes a necessity. I wouldn't mind the interview. Just alert me as the day draws closer.

You can definitely have something made for you by the students. We also make handbags for ladies. I will upload them online soon.

Rgds,

On Thu, May 27, 2010 at 8:41 PM, <[odhunowe@ualberta.ca](mailto:odhunowe@ualberta.ca)> wrote:

Dear Ms [REDACTED],

My name is Todd. I am a Kenyan student in Canada and am conducting research on the usage of M-PESA by small businesses in Kenya. I found your address from the SME website (<http://kenya.smetoolkit.org/kenya/en/>) and also looked at your wonderful blog. I am pleased with what you are doing and would like to interview you for an hour, if you do not mind.

This research is part of my requirement to complete my degree in communication and technology from the University of Alberta. If this is okay with you, I can arrange for an appointment during the month of August when I shall be in Kenya. Kindly let me know if you have used M-PESA or if you know of someone who uses M-PESA frequently whom you may recommend. I am looking for at least 3-6 people to interview.

I hope to hear from you.

Wishing you the best.

\_\_\_\_\_

\_\_\_\_\_