

Adoption and use of Mobile Telephony by Micro and Small Entrepreneurs in Nairobi, Kenya

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ICTs have played a positive role in promoting development of Micro and Small entrepreneurship in Kenya, and the mobile phone in particular appears to have a huge impact on the effectiveness and efficiency of micro-enterprises. Mureithi (2005), notes that penetration of the cell phone is high among Micro and Small Enterprise (MSEs) in Kenya. The factors affecting the decision to own a mobile phone includes the ability to communicate anywhere, anytime and subsequent faster sales of products, among other benefits. The MSEs have faced tremendous growth in the capital city of Nairobi. It is observed that with this growth MSEs experience cut throat competition within the sector. This is because of the similarity of activities and services offered by MSEs. The entrepreneurs face various challenges often leading to stunted growth, losses and closure of business. The challenges experienced include: high dependency on customer loyalty and referrals to source clients, loss of existing clients and the stiff competition in the industry. The mobile telephones make it easier today for people to communicate easily and perform transaction without moving from one area to another. This paper examined the adoption and use of mobile phones by MSEs. The use of mobile phone has revolutionized the way MSEs conduct their business. A survey was conducted on the MSEs in Sunbeam Trading Center in Nairobi. Self-administered questionnaires were given to the respondents. This approach enabled the study explore the variables using the quantitative analysis. The study was supplemented by a review of existing literature.

Key words: Mobile telephones, SMEs, Mpesa, Zap, profitability and Second hand cloth traders (“mitumba”)

Introduction

The advent of mobile telephony has caught many unaware of its potential and thus has surpassed expectations of the potential customers. Mobile telephony industry keeps improving and developing new products and applications in line with the needs of the customers. The mobile telephone companies such as Nokia, and Samsung and the service providers such as Safaricom, Zain, Yu and Orange work tirelessly to improve the phone applications and services for purposes of business processes and application. These notwithstanding individuals have come to appreciate the various mobile phone applications for business purposes more so m-banking services. Thus mobile service

operators work tirelessly to come up with collaborations with banks so that they attract more customers to their services. These include M-Kesho a Safaricom product collaborating with Equity Bank. Furthermore, Pesa Pap - a Safaricom product is collaborating with Family Bank.

The availability of mobile services has already revolutionized communications and surpassed the fixed telephone network. Moreover, it has not been uncommon for prices of fixed network-based services to be based on deeply entrenched subsidies that, in turn, have discouraged private investment in fixed networks, even where such investment has been permitted. As a result, long waiting lists for fixed network services—at times exceeding ten years- have developed in those countries. Now, the availability of mobile services has offered those countries the option to leapfrog existing fixed networks and services with mobile telephony, and millions of consumers now have the opportunity to purchase communications services where they previously did not.

Obirih-Opareh and Essegbey (2008), view the classic MSE as characterized by informality, scarce capital, and a lack of access to scientific knowledge, limited access to market, limited innovation, sometimes seasonality and even risk of collapse of business. Yet MSEs, given the critical segments of the population they cover, constitute a means of addressing key national socio-economic goals. The mobile phone revolution will enable the operations of MSEs to gain with greater openness to access to input factors and markets in a variety of ways. In addition the mobile telephony is the dominant form of telephony and micro-enterprise is the dominant form of enterprise in the ‘majority world’ of developing countries. Mobile phones were valued for their connectivity and convenience, more than for its mobility, and its impact may therefore be very much like that of a fixed line.

Profile of Micro and Small Entrepreneurs in Sunbeam Trading Center, Nairobi

The MSEs located in the Sunbeam Trading Center are characterized by their business of selling second hand clothes commonly referred to as ‘mitumba’. These are clothes imported from various countries abroad mainly Europe and America. The nature of their trade is that they sell ‘camera’ clothes in that these are the best and most trendy pieces of clothing in a given bail of mitumba clothes. They buy these clothes from traders in Gikomba market who purchase the bails and let the Sunbeam entrepreneurs go through them as they pick the best at very low prices thence they iron them and display them in their small stalls in town center. The mitumba business is booming in that their target clients are those individuals who are working and do not have time to go to the Gikomba market to purchase clothing. Thus they price their clothes at very high profit margins of about 300%. The Sunbeam trading center is placed in the middle of the city where it is considered as a very busy point in which supermarkets, bus stages and many other trading activities are conducted.

With the closure of textile industry in Kenya, mitumba business took to the stage in the late 1980s and they came in to supplement the clothing industry which were lacking in trends and fashion and they are considered a cheaper option for most middle class and lower class Kenyans. However, in the recent occasions of the budget reading, there has been a rise in the tariffs of mitumba bails thus causing an increase in the prices of the

clothes. This notwithstanding, the mitumba clothes offer many Kenyans a source of livelihood, mainly the youth who do not get formal employment.

According to Bokea (1999) small enterprises generally serve markets that are in the immediate vicinity which offer only limited opportunity for expansion. This tendency may persist as a result of imitative patterns of development so that market become saturated, limited marketing management capabilities and marketing resources, lack of technical base and know-how which confines small enterprises within a narrow range of products and services and finally lack of exposure to information on new products and market development. In addition the ILO (1972) suggests that existing firms fail to grow large when more small firms constantly enter in the market after losing hope of formal employment. They start business in order to survive. Due to low income and poor economic conditions, the business competes for a very limited market making it difficult for them to earn reasonable living and re-invest. Njoori (1996) viewed that there are many potential users of micro and small enterprise products who would buy them if they knew about them. The quality, quantity and price would suit their needs, transport facilities are available and potential suppliers would be willing and able to provide what is required but neither is aware of the possibilities.

According to Jobber (1995), technology can have a substantial impact on people's lives and firm's fortunes. Many technological breakthroughs change the rules of the competitive game. The sessional paper No.2 of 2005 indicates that micro and small enterprises are characterized by restricted levels of technology, inappropriate technology and inadequate institutional capacity to support adaptation and absorption of modern technological skills. Adeya (2003) noted a significant percentage of MSEs are ignorant about information and communication technology (ICTs) and their importance for conducting business in this era of globalization. The costs of ICTs are prohibitive to many SMEs however, research indicates that mobile telephony is cheap more so those imported from china.

Mobile communication technologies have penetrated consumer markets throughout the world. Initially, mobile services primarily facilitated voice communication. Recently, new forms of mobile services have made possible text messaging, web surfing, digital imaging, payments, banking, financial instrument trading and shopping (Mao et al., 2005).

The growth in the mobile phone industry has accelerated in few years due to constant technological development. Mobile phones have undergone a huge change from being an engineering product to become one of the most popular consumer electronics products (Catalan and Kotzab, 2003).

Mobile Telephone Network Services

Mobile telephony was first introduced in Kenya in 1992, and the technology has moved from the initial External Total Access Communications Systems (ETACS) to the second and third generation of Global Mobile Systems (GSM). The mobile cellular phone market is currently operating a duopoly with two service providers; Safaricom Limited, a joint venture between TKL owning 60% and Vodafone UK owning 40% Kencell Communications Limited, a joint venture with Celtel International¹⁵ owning about 60%

and Vivendi Telecom International owning 40% Safaricom was Kenya's first GSM operator and began offering services in 1997.

Subscriber growth however did not take off until 2000 after a combination of factors, including the licensing of a competing GSM operator and the investment provided by Vodafone for network expansion. Kencell was the first licensed mobile operator and became the second GSM operator in January 2000. Even with this limited liberalization in the cellular mobile market, the impact has been far reaching, especially with respect to mobile phone penetration. The mobile network surpassed the fixed network in 2000/2001 and has since then experienced phenomenal growth. By 2003/2004, the mobile network was seven times the size of the fixed network. Although mobile services are more expensive than fixed services, many people have opted for this "premium" service. This may be attributed to the relative better customer service, the ease with which connections are obtained and the relative reliability of the mobile networks. The introduction of competition has resulted in drastic reduction in connection charges and handset prices. By 2003/2004, for example, a low end handset could retail at Ksh. 1,000 to Ksh. 2,000 in comparison to over Ksh. 200,000 in 1999/2000. This has led to increased demand and usage of the service in rural and urban areas. The two operators exceeded both their rollout and coverage obligations. The quality of service performance however was below expectation as evidenced by frequent congestion and high call drop rates.

Business applications

Mobile phones are occupying innovative open spaces in business activities. It has become an important strategic tool to bolster competitiveness and growth (Frempong, 2009). Literature is abounding with examples on how MSEs have increasingly used mobile phones for business purposes. Abraham (2007) found that the use of mobile phones contributed to reducing uncertainty and risks within the fishing industry of Kerala. The fishermen were able to access market information and this helped them to make definitive choices in determining where to land their catch for good returns. In that case uncertainty about the market situation for the demand of their products is reduced. Mobile phones are contributing to the effectiveness of onion trade in West Africa which spans the northern Ghana, Burkina Faso, Mali, or Niger. According to Overa (2006) most of these traders have subscribed to the mobile phone services and they use these services to transact business and monitor the transportation of onions across the sub-region. Generally, Donner (2008) provides a comprehensive review on innovative applications of mobile phones by MSEs from developing countries. However, by far the best known experience of mobile phone application in business in West Africa is that of the MISTOWA Project in which, farmers access market information via mobile phones. The project, "Strengthening Regional Networks of Market Information Systems for Traders. Organizations in West Africa (MISTOWA)" sought to address also the peculiar challenge of low intra-regional trade in agricultural produce in eleven West African countries including Ghana. It covered fourteen commodities such as rice, maize, cassava, tomatoes, onions, cashew, shea nut/butter and cattle. Sponsored mainly by USAID/West Africa, the project involved the development of an ICT-based platform – TradeNet services - which enabled the farmers either by themselves or their trade associations to find buyers using their mobile phones (Debrah, 2009).

Contacts with Suppliers and Customers

Mobile phones have proved to be instrumental in the quest to give access MSEs to link up with their customers and suppliers. In effect, the greater majority of the MSEs recognize the catalytic role mobile phones play in maintaining that important segment of business operations – constant contact with suppliers and customers. Jagun, Heeks and Whally (2008) argue that business relations becomes quicker as the required business information can be fast-tracked for decision making through increased application of mobile phones in business cycles. Mobile telephony ensures direct relationship with clients thereby eliminating business intermediaries, Jagun et al (2008). However, MSEs in Tanzania value face to face interactions with their clients. According to Molony (2006), the direct physical interaction encourages trust which is salient in the activities of the MSEs informal nature. However, personal relations cannot entirely be eliminated in the operations of MSEs in Africa; mobile phones provide spaces which can affect the traditional way of doing business and introduce some openness into their operations.

Reduction of Transportation Costs

The cost of transportation has in a long time been considered high by the MSEs; however the impact of mobile phones cannot be emphasized. The mobile phones are considered to reduce the transactional costs and thereby reducing the cost of doing business. Shop owners in Tanzania have reduced physical travel to contact suppliers or place orders by relying on their mobile phones to perform these activities Samuel *et al.* (2005). In Africa business setting, one cannot entirely rule out physical travels, but travels may only be made when very necessary e.g. to collect orders which had previously been negotiated and concluded through mobile phone intermediation. Courier system which would have enabled a supplier to send a consignment to a buy is not well developed in Africa. So MSE operator only travels to the supplier when consignments are ready for delivery. This reduces the cost of transaction for the entrepreneur. In the Ghana study, MSE respondents mentioned this as an important factor in the use of the mobile phone.

Contribution to Profit Margins

The profit margin arising from the use of mobile telephones are hard to ascertain due to the fact that financial figures from MSEs are speculative – most of them do not keep proper records on operations. However, research shows that MSEs emphasized the positive impact of mobile phones to their business profitability. The contribution to profitability could be realized in terms of reduced transportation cost where the savings could contribute to the reduction of cost of doing business and, therefore, add to the profits of the MSEs (Frempong, 2009). Placing calls to make these contacts result in some expenditures, but in relative terms, it is cost-effective and further, prevents the loss of customers due to closed shops when the entrepreneurs travel to make and take orders (Frempong, 2009).

Access to M-banking services

The massive growth of mobile phones in Africa and technological developments have provided enormous opportunities for the provision of innovative financial services based on mobile phone platforms, and these services, as argued by Cracknell (2006) provide flexible and convenient financial services. These services epitomize the openness of the technology to transform the financial sector. Financial services based on mobile phone platforms are very prevalent in East and Southern Africa. Mobile banking solutions such as M-Pesa, Zap, M-kesho and Pesa-Pap have been introduced in Kenya, while Wizzit exist in South Africa. In Kenya, the MSEs are using M-Pesa as a bank. They lodge in their extra incomes and retrieve such savings from accredited agent of M-Pesa. They also make payments through transfers of their e-cash to their suppliers or debtors as m-banking can be used for person to person, remittances, payments of utility bills, airtime, microfinance loans and disbursements (Mobileactive, 2008).

The introduction of m-banking in West Africa is still in its formative stage. A study conducted in Ghana revealed that very few MSEs were aware of the mobile phone banking. On the actual usage of the facility, less than one percent actually did use the service. This suggests that there is a lot more work for banks to do by way of educating the public on the practical applications of mobile telephones. It is also important that the mobile phone companies partner the financial institutions to exploit the potential of the mobile phone infrastructure to provide innovative financial services in the country.

Another major concern in the use of mobile phone banking by the entrepreneurs was security. More importantly the availability of the service in the country was limited. For example, it was only in mid 2009 that MTN introduced mobile transfer in the country. The type of mobile banking services provided through SMS include request for cheque book, statements of accounts, information on loans, balance enquiries, transaction details, etc. (Frempong, 2009)

Materials and Methods

In an effort to achieve the research objectives a survey design was adopted. The population of interest comprised of micro and small scale entrepreneurs found in the sunbeam trading center in Nairobi, Kenya. Simple random sampling was conducted in the sunbeam trading center in which 60 respondents were selected. The population of the traders is usually 200 in which 30% formed a representative sample for the research. Self-administered questionnaires were distributed to the respondents. Data analysis was conducted using quantitative techniques and descriptive statistics. The data was analyzed with the aid of the software package for social sciences (SPSS) version 11.

Results and Discussions

Transport costs

The sunbeam “mitumba” clothing traders have to travel to the main market Gikomba in order to get supplies for their businesses. They however use their mobile phones to contact the suppliers in case of new supplies of ‘camera’ clothes. They have multiple suppliers of their clothes and thus the mobile phones assist them in booking appointments with their suppliers. Generally 98% of the entrepreneurs mentioned that adoption of mobile telephones has helped in reduction of transport costs for sourcing of supplies, earlier on they would visit their suppliers to book appointments on when to purchase the clothes and they would make many trips to the larger Gikomba market. This was echoed by Samuel et al, who found that the traders in Tanzania agreed to it that mobile phones have greatly reduced their transport costs. In addition in Ghana it was found that mobile phone was used for this application.

Message services

Mobile phone application has many features including, messaging, calling, etc. the MSEs all mentioned that they all used the messaging application. This application enabled them to send messages to their clients about their products. Most of them sent messages about new product arrivals, reminders of payment and sale and discount offers. To them this application deemed the most reliable owing to the fact that cost of sending a message was far less than making calls. Most of them indicated that most of their clients preferred to be sent text messages than to be called because of their work obligations and other commitments. A main advantage mentioned by the entrepreneurs was that you can send the same message to multiple recipients. Regular customers are always contacted using text messages. Some of them mentioned that they would use the multi media messaging services to send images of their products to particular customers who demand for them; however it was not a popular service used by the entrepreneurs. Nevertheless the use of audio messages was not applicable to the entrepreneurs because they dint think it was necessary.

Money transfer services

Financial services based on mobile phone platforms are very prevalent in East and Southern Africa. Mobile banking solutions such as M-Pesa, Zap, M-kesho and Pesa-Pap have been introduced in Kenya, while Wizzit exist in South Africa. In Kenya, the MSEs are using M-Pesa as a bank. They lodge in their extra incomes and retrieve such savings from accredited agent of M-Pesa. They also make payments through transfers of their e-cash to their suppliers or debtors as m-banking can be used for person to person, remittances, payments of utility bills, airtime, microfinance loans and disbursements (Mobileactive, 2008).

The Sunbeam entrepreneurs used the m-baking and money transfer services in their business. Most of them (92%) of them used the Safaricom m-pesa services mostly as a

bank and for purposes of money transfer, such as payment for supplies and also receiving pay from their customers. They also used the M-pesa to buy airtime for their phone, it being their banks; they easily buy airtime from that application provided by their subscriber. One important issue about the M-pesa is that the m-pesa outlets are found in various places and in the sunbeam trading center there were 12 m-pesa agents, the availability of the m-pesa agent services play an important role in having many entrepreneurs subscribe to these services. However the other money transfer service provider Zap, from the Zain ltd, had very few (3) outlets in the trading center. This explains why the entrepreneurs were not keen in subscribing to these services, more so because their clients were mainly Safaricom subscribers. In addition some of the entrepreneurs used both the M-pesa and Zap money transfer services because they found it necessary just incase their customers used either of them.

The entrepreneurs used the money transfer on a daily basis (42%) of the respondents mentioned, 47% used this services on a weekly basis. The latest money transfer services, M-kesho and Pesa pap, were not popular amongst the entrepreneurs because of the fact that one needed to have a bank account with Equity Bank and Family banks respectively so that you can access the services.

Knowledge of mobile application

It was necessary to find out how the entrepreneurs came to learn of the mobile phone applications for business purposes. This was important to see whether the service providers consider these entrepreneurs as important for their business. It was concluded that the service provides especially, Safaricom put an effort in educating these entrepreneurs about the mobile phone applications and indeed many of the entrepreneurs used the Safaricom services.

Mobile Phone application in businesses

Most of the entrepreneurs mentioned that have used the money transfer services between 2-3years. Further 52% of the entrepreneurs transferred an amount between Ksh. 10,000-20,000, the main service provider was Safaricom with their M-pesa money transfer application. However some of the respondents (20%) mentioned that they used both Safaricom’s M-pesa and Zain’s Zap for convenience purposes just incase there was delay in transactions and maybe they have customers who use either of the money transfer services.

Table 1: Application of mobile phone in business

Application of mobile phone in business	Mean	Standard deviation
Sending information about new products	0.32	0.38
Money transfer services	0.34	0.38
Marketing of business	0.33	0.38

The respondents further indicated that the use of mobile phones in business transactions has enabled their business to improve their profit margins between 30-40%. However it is not possible to measure how much in terms of profits because the entrepreneurs do not keep records of their business transaction in a financial manner to get exact values.

Challenges faced by MSEs in using Mobile telephony applications for their businesses

Challenges are inevitable in any invention and mobile telephony comes with challenges. The entrepreneurs identified the challenges that most of them are associated with the money transfer services and most of them indicated that the m-pesa services experienced delays in transaction (33%) with a mean of 0.4 and standard deviation of 0.07. Some of the respondents, 47% mentioned a limit in daily cash transactions. Others mentioned the issues of security and inefficient services. This information is relayed on the table below.

Table 2: challenges faced by MSEs in mobile phone application
Descriptive analysis of the challenges faced by MSEs

Challenges faced	Mean	Standard deviation
Delays in transactions	0.4	.07
Limits in cash transactions	0.38	0.2
High costs of transactions	0.07	0.17
Inefficient services	0.4	0.25
Lack of security in services	0.37	0.35

Conclusion

The availability of the mobile phone gives the subscribers more reason to adapt to the use of the mobile phone and in addition, the ease of use and mobility of the phones make them more attractive than the fixed telephones. The MSEs in the study confirmed the wide spread use of the mobile telephones especially for business applications. The entrepreneurs find the need to use the mobile phone in contacting their suppliers and customers. Most of them prefer to use the phones due to their low cost of transaction and the wide range of uses such as messaging, money transfer and other business applications like marketing of their businesses. In as much as there are benefits in use of mobile phone applications, the entrepreneurs mentioned that there are various challenges in using the mobile phone applications for business purposes such include; delays in transactions, inefficient services and high costs of transactions.

It is recommended that the service providers pay attention to the needs of MSEs in their needs such that they should offer lower cost packages to the entrepreneurs considering their special needs and those enterprises are important to national building.

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