

**UPTAKE OF MOBILE NUMBER PORTABILITY IN KENYA**

**BY**

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### **Declaration**

I declare that this is my original work and has not been presented by any other person to a university or college for the award of degree, diploma or certificate.

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## **Dedication**

I dedicate this project to my loving wife, my dear parents, family and friends. Your support, love, patience, encouragement, sacrifice and prayers have transformed my dreams to the success of this degree.

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First, my sincere gratitude goes to the Almighty who by His grace I was able to do and complete this study. This far the Lord has brought me, it has been a challenging project and I thank Him for his mercies. In addition, I would also like to thank the individuals who have contributed to the successful completion of this project.

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## **Abstract**

Mobile Number Portability (MNP) presents the subscribers with freedom of changing network providers without changing their mobile number. MNP is seen as a great opportunity which could increase acquisition and to a greater extent encourage healthy and fair competition among telephone operators and also promotes low call and interconnection rates. The purpose of this study is to explore the implementation and success rate of MNP since launch. The study was guided by the objectives; to explore the adoption of mobile number portability (MNP), to identify factors influencing adoption of mobile number portability in Kenya and to investigate technology implementation procedures adopted by CA. This research was executed through the use of a statistical cross-sectional survey where the population of study consisted of all the 3 remaining MSPs in Kenya and primary data was collected using a self-administered structured questionnaire. The data was analyzed using Statistical Package for Social Sciences (SPSS) and content analysis was used to assist in summarizing the findings. Descriptive statistics and factor analysis was used as a method of analyzing data. The study found competitive market practices, consumer awareness on procedures, MNP porting cost, lack of porting information and regulator reluctance in enforcing set rules were the main factors that may have led to low uptake of MNP technology in Kenya. The study concludes that good customer care as perceived by subscribers supersedes incentives such as cost reduction that would be enjoyed if customers switched. Market instruments such as advertising, sales promotion and added services such as money transfer were affecting the porting process adversely. The study recommends that the level of awareness was relatively low and therefore there is need to increase awareness informing subscribers of the benefits that would accrue to them and assurances should be given to subscribers that porting does not result in loss of their current numbers but only a change of service provider and this could alleviate fears of loss perceived by subscribers. The study suggest that a further study to be carried on other factors affecting mobile number portability apart from the uptake of MNP covered in this study.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background**

The use and application of information technology (IT) by organizations has been growing at a fast pace. The use of technology has evolved from automation of structured processes to systems that are truly revolutionary in that they introduce change into fundamental business procedures. It is believed that more than being helped by computers, companies will live by them, shaping strategy and structure to fit new information technology (Fortune, 1988).

On the other hand studies indicate that even with the exponential development in technology, processing power, and breakthrough in IS and reduction in costs IS projects have continued to fail to achieve in time, budget and deliverable goals (Jugdev and Mueller 2005, Whyte and Bytheway 1996, Lyytinen and Hirschheim 1987, Galloway and Whyte 1989). Mobile number portability (MNP) is one such technology that can bring call tariff transparency, better competitiveness and lower cost of call and inter-connection rate that could affect the usability, affordability, on-line connection of mobile services for users and have impact on the profit margin (Odunaike, 2010). Although MNP as a technology has a lot of expected benefits that each and every technology is expected to come with, it has its own challenges that lead to low success rate in the use of technology in Kenya.

##### **1.1.1 Mobile Number Portability**

Mobile Number Portability (MNP) presents the subscribers with freedom of changing network providers without changing their mobile number (Nilsson, 2006). MNP would see mobile telephone customers keep their telephone number—including the prefix—when switching from one mobile service provider (MSP) to another. In the absence of MNP, customers have to lose their mobile number and must adopt a new one when they switch operators. As a result, customers face switching costs related to informing people about changing their number, printing new business cards, missing valuable calls from people who do not have the new number etc. Based on such contemplations, many regulatory authorities have made MN mandatory or are about to require its introduction to reduce customers switching costs and attempt to make mobile

telecommunications more competitive (Reinke, 1998).MNP is seen as a great opportunity which could increase acquisition and to a greater extent encourage healthy and fair competition among telephone operators and also promotes low call and interconnection rates.

According to Nilsson (1997) MNP involves a series of complex internal and external application integration. MNP is an IT infrastructure that comprises of a number of heterogeneous systems and customized applications, with a Web-based integration platform to support its important protocols which enables applications to communicate. For MNP to be successful, it requires all the internal applications to be properly integrated with external applications identified as the central reference database of customers. Earl (1995) describes system integration and its very nature as an objective to strive for. Nilsson (2005) underlines that MNP process, functionality, subsequent administration and maintenance is complex, which involves careful planning and balancing of factors such as cost, speed, simplicity, reliability, convenience, heterogeneous integration and robustness.

Since it was first implemented in Singapore in 1997, mobile number portability (MNP) has been seen to bring considerable benefits to consumers, such as lower prices, higher quality, greater choice, broader social networks and a larger range of services (Lee et al. 2006). In addition, MNP has been fronted by many to be an effective policy instrument for making a more competitive market, specifically by giving new entrants a competitive opportunity (Viard, 2007; Khan, 2010). Since its first implementation in Singapore MNP implementation to date has seen more than 60 countries follow suit. The table 1.1 shows MNP implementation year by year and country.

**Table 1.1: Global MNP implementation evolution**

YEAR	COUNTRY
1997	Singapore
1999	Hong Kong, U.K., Netherlands
2000	Switzerland, Spain
2001	Denmark, Sweden, Norway, Portugal, Australia, Cyprus

2002	Italy, Belgium, Germany
2003	Finland, France, Iceland, Greece, Ireland, Luxembourg
2004	Slovakia, South Korea, Austria, USA, Hungary
2005	Taiwan
2006	Czech Republic, Croatia, Saudi Arabia, Oman, South Africa
2007	Canada, Pakistan, Israel, Nigeria
2008	Brazil, Malaysia, Mexico, Bulgaria, Egypt
2009	Ecuador
2010	Peru, Thailand, Jordan, Kuwait, Albania
2011	India
	Kenya

Source: Chweya (2013)

### 1.1.2 Mobile Service Providers in Kenya

The mobile telecommunications industry has developed rapidly over the last three decades representing one of the most fascinating stories of technology diffusion (Aker, 2008). Since 2002 mobile subscribers have surpassed the number of fixed lines globally. The process to attain what fixed phones have struggled for more than 120 years took less than a fifth of the time for mobile networks. This cross-over time of mobile users has been even much shorter for developing countries. By the end of 2009 the number of mobile telecommunications subscribers reached 4.6 billion, which is corresponding to 67 per cent of the world population. This technology is particularly significant in developing countries, where there are more than twice as many subscriptions (3.2 billion) as in developed countries (1.4 billion) (Arthur, 2009).

Kenya being one of the developing countries has not been left out in this mobile technology growth, with the industry being the fastest growing and the most profitable in the Kenya. By fourth quarter of 2014/2015 there were 36.1 million registered mobile cell phone subscribers, an increase of 3.6% the previous quarter. The penetration rate of mobile phones in Kenya is 83.9% (CA, 2015). The vibrant mobile industry in Kenya is regulated by Communications Authority of Kenya (CA) and has three operational GSM MSPs - Safaricom, Airtel and Orange and 1 mobile

virtual network operator - Equitel. Safaricom is the leading provider with a market share of 67.0 percent, Airtel has a market share of 19.4 percent, Orange having a market share of 11.2 percent and Equitel 2.4 percent market share. There has been a cut throat competition among the service providers which has led to massive call cost reduction. It was expected that MNP would bring a level playing ground for these competitors.

### **1.1.3 Mobile Number Portability in Kenya**

MNP was introduced in the Kenyan market on 1<sup>st</sup> April 2011 to increase competition among Kenya's four mobile-phone companies who have been keen to win customers to their networks notwithstanding insufficient information in the public domain concerning the service. Some service providers offered to pay porting fees for consumers who chose to join their network. According to Kangangi (2012) the effects of this service on the Kenyan mobile market was expected to be minimal because most mobile users have two to three pre-paid lines, and for them MNP would not bring much relief. The introduction of MNP was based on the fact that it was expected to bring considerable benefits to consumers of mobile services (Ovum, 2000). This is because it gives immediate advantages to the customer who is now able to choose a better service provider without having to reflection additional costs (such as reprinting business cards). Furthermore, the customer can profit from competitive price reductions.

According to EU (2002), mobile number portability is considered a key facilitator of consumer choice and effective competition in a competitive telecommunications environment. EU (2002) further argues that MNP has an important role in enabling consumers' selection process of the best service provider in the market and also promoting competition among active market operators. MNP is also seen an effective tool for removing existing obstacles faced by customers who wish to switch MSPs, consequently intensifying the already ferocious competition in the communication markets like the case in Kenya for example which has been engrossed by a price and market share war. As Valetti (1999) raises quality issues in competition among mobile operators it follows that; in the Kenyan telephony market which is not commonly known for its customer service, number portability provides the opportunity for operators to distinguish themselves by the quality of their service offerings rather than purely by price.

Statistics from the Communication Authority of Kenya put the total number of those who applied for porting services at 54,616 by the end of 2011, making up just 0.2 per cent of the entire 26.5 million subscriber base. In the subsequent months, the porting numbers declined. When the service was launched in April 2011, 15,569 subscribers moved and an additional 14,759 in May. Contrary to expectations that the numbers would go up, given the increased marketing activities by CA and MSPs, the hype slowly died off and numbers hit a low of 747 in December 2011. According to CA (2011) MNP was implemented after the commission conducted public consultations on the implementation of Mobile Number Portability; with the majority of respondents being in favor of the introduction of the service. Unfortunately, MNP has not been as hugely successful as was anticipated. CA (2012) also attributes the low uptake of MNP to Mobile phone users who have access to multiple SIMs and are therefore able to switch from network to network and the fear to "lose" some of the value added services they have had from other networks. Though the consumers now have freedom to move, the operators are unsatisfied with their returns on investment on MNP.

## **1.2 Statement of the Problem**

MNP is an essential feature in the promotion of competition in the telecommunications industry (Reinke, 1998). The effects of Mobile number portability have varied from country to country, and range from weak to strong (Viard, 2004). The state of the mobile industry in Kenya following the introduction of MNP and the available empirical evidence on the portability of numbers appears to be weak. Another example which experienced weak portability effects is China. According to Liu (2010) China is one of the countries which experienced very small number of applicants two years after launch contrary to government expectations with 210,000 out of 20 million subscribers applying for porting, roughly 1%, and subsequent low successful switching ratio of 33% (70,000 out of 210,000 applicants were successfully ported). Hong Kong, Chile, South Korea and Australia are considered the most successful countries in the adoption of MNP, with porting rates of over 6 percent (Lago, 2007). The successful implementation of MNP is linked with high porting rates which show that the facility is being utilized and confirms that the service is in demand.

The government through the CA set MNP rules after launching the service which was set up asymmetrically, to help weaker service providers to compete more effectively with the market leader. Years after launch, surprisingly, the number of applicants were very small, 10,323 out of 30.7 million subscribers applied successfully ported which is roughly 0.03 % (CA, 2012), which is far from the government’s initial expectation, and dramatically different from the situation in other countries where MNP has been implemented. According to Table 2 it is evident that the numbers of customers porting is extremely low (lower than 0.001% of active subscribers).

**Table 1.2: Number of In-Ports in Kenya**

<b>Period</b>	<b>Apr-Jun 15</b>	<b>Jan-Mar 15</b>	<b>Quarterly variations (%)</b>	<b>FY 2014/15</b>	<b>FY 2013/14</b>
<b>Number of in-Ports</b>	894	618	44.6	3,236	1,388

Source: CA, Operators Returns (2015)

A study conducted by Smura (2006) looked at Finland, Italy, Singapore and Germany. Finland is one of the countries which had a positive report on the impact of MNP to its consumers. This was attributed to enforcement powers which the regulator had. Bundled services, SIM – lock in contracts and long contracts were banned (Smura, 2006). In Italy, two years after the implementation of MNP, only 3.68% of subscribers had ported. Italy has a high usage of mobile telephony and 93% of users are prepaid. To compete in the competitive market, operators launched aggressive marketing campaigns to attract customers. By now, Italy is said to have the highest cumulative porting rate in EU. In Singapore, MNP usage was very low and the contributory factor was that subscribers were obliged to pay monthly fees to the previous service providers. Germany is reported to have had very low ported numbers mainly because of lack of marketing campaigns and longer time frames for porting due to technology lags, which was about 31 days (Haucup, 2006).

Chweya (2013) suggested in her publication; CA anticipated MNP would have a high demand. She further noted MNP required significant investment on infrastructure and communication by the regulator and MSPs. MNP was not accepted well by customers. Chweya suggested the low

response on MNP either meant the customer loyalty was high or there was a high apathy amongst the population. Technical hitches, operators developing cold feet frustrating subscribers porting requests, “fighting” within themselves and subscriber behavior were suspected to cause teething problems post launch of MNP in Kenya (Kagwathi, Kamau, Muthoni and Kiarie, 2013). According to opinion by Kangangi (2012) MNP strategies based on non-disclosure of information about the service to customers and defensive tactics were possible factors which impacting adoption MNP in Kenya. Most of the previous study has not been subjected to empirical study.

Hence the purpose of this study was to explore the implementation and success rate of MNP since launch. Was the perceived low rate of MNP adoption driven by the technology itself or soft issues? Was it as a result of regulations; lack of it, clarity or comprehensive communication to operators and general public? Did apathy to the technology contribute? Was malpractice due to inter-operator competition a factor in the perceived low rate of MNP adoption?

### **1.3 Objectives of the Study**

- i. To explore the adoption of mobile number portability (MNP) on the telecommunication industry in Kenya.
- ii. To identify factors influencing adoption of mobile number portability in Kenya.
- iii. To investigate technology implementation procedures adopted by CA.

### **1.4 Value of the Study**

This study would be of critical importance to the management of MSPs in Kenya. Today’s turbulent environment with fast changing technologies requires each and every company to seize an opportunity that comes with technology. The current research project work would be useful to telecommunication companies in providing insight on how to cope with competition with the introduction of new technology.



The policy makers would find the findings of this study useful for future decisions regarding adoption of new technologies, particularly MNP technology, and further come up with ways of successfully implementing IT projects.

Researchers would also benefit from this study as it adds to their knowledge MNP technology implementation in the Kenyan context, impacts of MNP to telecommunication and challenges of implementation. The findings will also open up new areas for research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter is concerned with the review of literature related to the study. It summarizes the information from other researchers who have carried out their research in the same field of study and other existing literature by scholars. The literature review will help in understanding what other related studies have found out and suggested in their recommendations.

#### **2.2 Theoretical Framework**

The theoretical framework of this study was based on switching theory and adoption theory.

##### **2.2.1 Consumer Switching Behavior**

In order to understand MNP influence on choice of MSP in Kenya it is critical to comprehend consumer switching behavior and the factors that make the customers start thinking about changing service providers. Significant numbers of customers switch operators at some point after their initial acquisition of a mobile subscription. There are likely to be many reasons for such switching for example changes in individual demand patterns, service innovation, learning by customers about the fit between their pattern of demand and operator offerings and changing price and quality propositions (Lyons 2006). These factors influence switching of MSPs are referred to as triggers. According to Roos et al. (2004) there are three different kinds of triggers; situational, influential and reactional. Situational triggers are changes in the customers' environment, for example the life situation or a demographic change. In situations where competitive forces are the driving factors, the trigger is called influential. This can be a situation where a competitor is trying to increase their market share. Reactional triggers have a direct connection to an incident that occurred between the provider and the customer. This study shall be conducted to investigate triggers that were the main reasons for customers to switch providers and what stories lay behind the switching.

### **2.2.2 Technology Adoption Theory**

Information Technology (IT) has been widely adopted across many sectors in order to increase competitiveness and reduce costs (Marsh and Flanagan, 2000), and is seen as a tool to gain a competitive advantage (Ives & Jarvenpaa, 1991, Earl 1993). The role of information technology and its impact on the organization is emphasized by Gerstein, Nadler and Shaw (1992), by pointing out that perhaps the largest single impact on organizational architecture and strategy has been the advancement of information technology. Technology is undoubtedly among the vital elements which shape an organization. The formal structure or arrangements inside an organization have been shaped by technology through changes in factors such as job design, physical outline or location, supervisory relationships and autonomy, cooperation inside and outside the organization, and establishment of work teams (Gerstein, Nadler and Shaw, 1992).

Generally adoption of information systems and technology can be an advantage to an organization and be part of a transformation that results in radical improvement; however it also has some downsides associated with it. These drawbacks can be categorized as behavioral and non-behavioral. With non-behavioral there are potential problems with the networks that would be established to permit information to flow. First of all as the number of users increase, there will be strain on the system and also difficulty to monitor users' activities. Secondly systems that cross organizational boundaries lead to utmost level of outsourcing or collaborating design efforts, which are potentially risky as related companies can gain access to sensitive information using it to the disadvantage of the outsourcing company (Friedmann, 1994).

The behavioral disadvantage revolves around two major themes. One is that people and organizations tend to castoff new technology because they are reluctant to change. For this reason it is significant that technology change comes about as part of accompanying change in the organizational practices and culture. It is also essential to incorporate organizational learning in to the acceptance of information technology (Seybold, 1993). The second theme concerns employee involvement in the change and the resulting job satisfaction. If it is not viewed as part of an overall transformation, the addition of technological process improvements or information systems which on the surface take away human responsibility is likely to lead to job

dissatisfaction (Alexander, 1977). The bottom line is that as good as technology may be, it cannot act alone as a panacea to improve organizational effectiveness.

According to Straub (2009, p.626) “technology adoption is (a) a complex, inherently social, developmental process; (b) individuals construct unique (but malleable) perceptions of technology that influence the adoption process; and (c) successfully facilitating a technology adoption needs to address cognitive, emotional, and contextual concerns”.

A high number of models and theories have arisen which aim to uncover the factors that will influence the adoption of technology. These factors range from focus on the technology itself through to the psychological characteristics of the individual (Dillon and Morris, 1996). There are many theories abound on factors influencing technology adoption. In this study we shall make use diffusion of innovation theory.

According to Rogers (2003) "Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system." Rogers goes on to state that there are four main elements of diffusion: innovation, time, communication channels, and social systems. These elements are defined as follows:

- Innovation: the idea, practice or object that is developed that is the focus of the adoption.
- Time: the acceptance rate of the innovation over time.
- Communication channel: how the innovation is introduced or how it is marketed to an individual.
- Social system: the elements (such as individuals, groups, organizations and/or subsystem) that are involved in the adoption of the innovation and their impact on each other.

There are five main factors that influence adoption of an innovation –

- Relative advantage: the degree to which an innovation is seen as better than the idea, program or product it replaces
- Compatibility: how consistent the innovation is with the values, experiences, and needs of the potential adopters

- Complexity: how difficult the innovation is to understand and/or use
  - Triability: the extent to which the innovation can be tested or experimented with before a commitment to adopt is made
  - Observability: the extent to which the innovation provides tangible results.
- Overall for mobile number portability to be adopted by consumers and impact choice of mobile service provider it needs to show relative advantage, compatibility and lack of complexity.

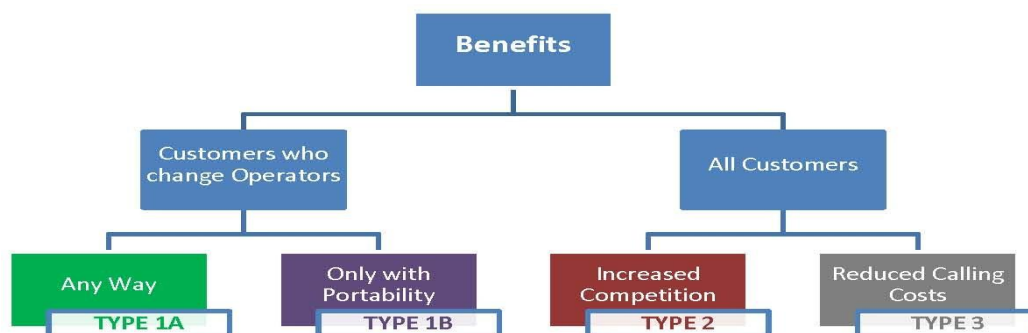
### **2.3 Mobile Number Portability**

MNP is the ability of mobile subscribers to switch between service providers while retaining their original mobile phone numbers (Smura, 2004). A NERA report (1998) describes MNP as "the ability of users to retain their telephone numbers when changing operator". Existing literature have focused at the composition of switching costs of mobile subscribers and most suggest that it consists of time and money spent in changing to a different operator, including having to inform contacts of the number change (Dick & Basu, 1994) and the loss of one's phone number, which has become a unique identifier of people (Buehler, Dewenter & Haucap, 2006). Businesses would also be at risk of losing commercial and relational opportunities through missing phone calls from those who are not aware of their number changes (Smura, 2004; Beuhler & Haucap, 2003). Gerpot, Rams & Schindler (2001), pointed out that customers put a great value on their phone numbers, particularly when they have been using it for a long time, and would somewhat stay with an unsatisfactory service provider than lose the number. The ability to switch to a new supplier within a little period of time and with no obstacles and disadvantages for the customer is essential for a functioning and efficient market. However, as mobile carriers decrease termination charges and introduce various switching barriers in response to MNP, it has been doubted whether a switching barrier is effectively lowered with the presence of MNP. Xavier & Ypsilanti (2008) describe switching costs as "the real or perceived costs that are incurred when changing supplier but which are not incurred by remaining with the current supplier".

Katka (2004) points out that a key benefit of MNP to the mobile telephony industry is that it helps to create a level playing field for small mobile operators and new entrants. Certainly, MNP

is considered important for new entrants, if they are to get a significant market share in a reasonable period of time, especially when a large proportion of potential customers already have at least one mobile number (Sutherland, 2007). Furthermore, once consumers and businesses have access to cheap, timely and effective means to port, they are in a significantly stronger position to negotiate deals with their existing operator or with a rival, and hence, it is not that MNP causes customer to churn, rather it frees customers to express their latent dissatisfaction with the prices and quality of their current providers. In contrast to this position, Lyons (2006) uses an econometric analysis of international time-series and cross-section data to estimate the average effects of MNP and maintains that MNP causes significant increase in churn rates. MNP also does benefit mobile network operators by providing the opportunity to increase market share and, particularly, to target high average revenue per user (ARPU) subscribers. Hence, mobile operators are better able to manage churn rates by offering customers deals that play to their brand strengths (KPMG, 2003). Also contributing to the benefits of MNP to the consumer NERA (1998) and Buehler et al (2004) classified MNP benefits as Type 1, Type 2 and Type 3 as summarized in Figure 2.1.

**Figure 2.1: Benefits of Mobile Number Portability**



Source: Smithers (2010)

Type 1 is categorized into Type 1A and Type 1B. Type 1A benefits are accrued by mobile telephone users who would change network operator even if MNP was not available. The benefits occur in the form of reduced switching costs. Another benefit for Type 1A is the avoidance of ‘dual sourcing’ whereby in the absence of MNP, some customers may choose to

retain the mobile services in order to receive calls on their existing mobile number. Type 1B benefits occur to users who choose to port their number because of the availability of MNP. Hibbard (2008) points out that the reasons that customers switch will represent genuine economic benefits only to the extent that new operators offer lower charges or higher quality because they are more efficient than existing operators. Type 2 customer benefits are those incurred by mobile telephone users who would not change network operator if MNP were not available. These include the costs of SIM cards, handset changes and other migration costs. Type 3 benefits are benefits that confer to other subscribers when a subscriber ports his number. IDA (2000) describes Type 3 as external benefits which are likely to be greater for subscribers who call many other subscribers.

Notwithstanding the numerous benefits of MNP, the notable downsides include: an inability of customers to determine the precise network they are calling (Smura, 2004), inability to gain on on-net and off-net differences in call rates and the tendency of mobile operators to take advantage and increase termination charges of calls (Beuhler & Haucap, 2003). Additionally, Aoki and Small (1999) argue that the service is also likely to be technically costly to implement and in most cases the benefits achieved could be lower than the costs incurred in adoption and implementation of the technology. Set-up costs (network set-up, systems development, awareness creation etc.), customer transfer costs (porting charges including closing and opening new accounts), and call routing costs are the main costs of setting up the MNP service (Lin, Chlamtac & Yu, 2003). Smura (2004) also considers database management costs, such as upgrading and maintenance charges to be some of the additional costs. A research by Keynote Capitals (2009) indicates that over sixty (60) developed countries with established telecom markets have so far adopted MNP, including several Asian countries. Singapore was among the first countries to adopt the facility in 1997, with Europe and the USA following in the early part of 2000 (Buehler, Dewenter & Haucap, 2005). Given its presence in the market for many years, it is clear that this type of service is almost not a new feature in the telecom industry.

## **2.4 Mobile Number Portability Adoption**

Since the 1990s, many countries have adopted the use of number portability, driven largely by regulators as their telecommunication markets become more competitive. Results have been

mixed. Hong Kong and Singapore were the first to implement number portability in the late 1990s, with recent implementation in Japan and Malaysia ((Lee et al. 2006; Atiya, 2010). In effect, there are three types of MNP adopted over the world. First is the local number portability where consumers are allowed to move between different local service areas of the same carrier without changing their mobile numbers. Here the customer is still served by the same operator but within a different service area (Thomas, 1998), Secondly cross-carrier portability where consumers are allowed to switch their phone number to another provider in the same local area (Xuan, 2010). The last option is hybrid portability whereby both the local area and carrier are changed simultaneously, which is a combination of the two above cases (Xuan, 2010). The most common MNP adopted by mobile operators is cross-carrier portability. Some of the successfully and failed adoptions are as discussed below.

#### **2.4.1 Mobile Number Portability Adoption Evolution**

According to the Infocomm Development Authority (IDA), (2003), MNP was initially introduced in Singapore in 1996. In line with the regulations, customers expected to pay monthly fees to their previous service provider. Upon review, the regulator established that the recurring monthly charges for porting incurred by consumers hindered those customers wishing to port. Furthermore such costs impacted negatively on the welfare of consumers and competition in the market. IDA subsequently instructed all operators to stop monthly recurring charges, and, operators were allowed to charge a one off amount. This decision was considered as a potential boost for consumer benefit and also an effective tool for competition growth. It was further established that porting was limited to postpaid but that decision was reversed to include pre-paid subscribers as well. This increased porting numbers (IDA, 2003).

MNP adoption in Hong Kong was done in 1999 as mandated by The Office of the Telecommunication Regulator (OFTA). This was done after a lot of resistance by big operators. Seemingly, MNP was well received by consumers because during its first month, more than 102,000 applications were made for switching (ACA, 1999). MNP adoption in Hong Kong came at the time when the market was very competitive with four fixed line operators and seven mobile operators.



Sweden was the first Nordic country to adopt MNP. At the time, there were 16 mobile operators. According to the Telecommunications Act of 1996 as amended, number portability was supposed to be implemented in 1999, but was delayed and finally introduced in 2001. The Act further stipulated that any costs incurred during the implementation of MNP within the operators would be borne by operators themselves and costs related to the transfer of the subscriber could be charged to the recipient operator by the donor operator (Levin, 2006).

Australia adopted MNP in the year 2001, through the Australian Communication Authority (ACA) directives which are seen as the world leader in implementing MNP. In 2007, Network Strategies in an article about the successes of MNP in Australia citing a study conducted by ACA in 2007. The report indicated that over five million successful ports took place with an average of 85,000 ports per month. The success was attributed to consumers' experience on MNP (Network strategies, 2007).

In Italy MNP was launched in 2001. According to Levin (2006) two years after the introduction of MNP, 68% of consumers had ported their number. The percentage was higher than those of their European countries such as Portugal, Spain and Germany. According to the study, MNP did not make any impact despite 95% mobile usage, of which 93% are prepaid. Porting took 5 working days to complete in a market of 3 mobile operators (Levin: 2006).

In Finland, MNP was adopted in 2003. According to the Communications Market Act, “a telecommunications operator shall not charge a user for the transfer of a telephone number to another telecommunications operator.” This was in contrast to countries such as Germany, which charged porting fee. The donor operator may, however, receive a one-off payment equivalent to the one-off costs of transferring the telephone number. Over 1,000,000 ported numbers were reported during its first year (Smura, 2004). In November 2006, Independent Communications Authority of South Africa (ICASA) adopted MNP in all the provinces. Brochures on the consumer guide to MNP were distributed on cross roads, shopping malls and other strategic places. The Authority also conducted a public awareness program country-wide to ensure that members of the public were aware about the introduction of MNP and its benefits. Despite all these efforts, it seems like MNP did not trigger a lot of interest for consumers. Moreover, the

three operators in South Africa reported high increase on their subscriber base but ironically, reported low ported numbers since 2006. Out of the 46 million mobile subscribers, not more than 500,000 customers had ported their numbers two years after implementation (Vodacom, 2008).

#### **2.4.2 Factors that Influence Mobile Number Portability Adoption**

A study by Iqbal (2007) highlighted several factors which should be considered in order to ensure the success of MNP. First, there has to be consumer demand for MNP. Consumers should be willing to port, and if porting is low, then the service of MNP should not be introduced. His view is that developing MNP technology is costly and indicated that putting systems in place without effectively using them, results in loss by operators and that wasteful expenditure could not be recovered. Furthermore, this would lead to economic failure.

According to Horrocks (2007), an MNP expert, MNP should be implemented in countries with big population and bigger mobile markets. In the absence of this, costs will outweigh the benefits (Iqbal, 2007). Second is the level of competition, where the level of competition between operators should be a measure for the success of MNP. He argues that when competition is at a mature level, then there is no need for the introduction of MNP because operators in such competitive markets do provide consumers with lower prices and quality of service. Lastly is the regulatory control. Iqbal (2007) indicates that a regulatory agency should be independent and powerful in order to ensure that the sector complies with regulations on MNP and for its success. Gans (2001) stated that regulators and policy makers should be aware that competition may increase in the mobile market, however, what is important to note is the means by which it is implemented. The approach or the method they use would be a determining factor for its increase or hamper effective competition and therefore be a detriment to consumer welfare. Iqbal (2007) posits that a precondition for the introduction of MNP should be the technical aspects with regards to the implementation, pricing and payment mechanism. MNP requires technical proficiency and that includes technical proficiency of the regulator (Iqbal, 2007).

One of the main challenges with regard to the implementation of MNP has to do with delays during porting. Lack of high uptake of number portability in the first year was due to delays in porting times which took about 25 days; this was due to user issues and technology issues. But

when the days were reduced to five, there was greater up-take with residential increasing to 18% and business to 80% again as proportions of customers that switched, not as proportion of customers in total (Lyons, 2006).

## **2.5 Conceptual Framework on MNP**

### **2.5.1 Types of MNP Benefits**

There have been both qualitative and quantitative studies in the literature. As explained earlier, Lyons (2002) conducted an econometric analysis which is an empirical research. He segmented the benefits of MNP in three categories: first benefits obtained by customers who switch. Second, benefits by all mobile telephony users and lastly, benefits obtained by those calling to ported numbers. As mentioned earlier, this study will focus only on the benefits experienced by consumers who ported their numbers, which is benefit 1.

### **2.5.2 Quality of Service**

Melody (2003) describes competition as the driver of low costs, and quality service and customer attraction and retention among other drivers. This study will investigate if reasons for porting among other were due to quality of service. Quality of service in this context is based on the consumer's interpretation as it has different meanings. Operators look at the quality of service as the availability of network coverage, upgraded technology and manageable drop calls.

### **2.5.3 Porting Information**

In South Korea MNP became a success month after it was introduced. Contributory factors according to Lyons (2004) were strong positive association with income and awareness of MNP among others. Other countries could not make a positive impact on consumers because of consumer's ignorance on the concept of MNP. This study will investigate if consumers had sufficient information about MNP prior to switching.

#### **2.5.4 Porting Times**

Previous literature informs us that porting times were one the determining factors in the success or failure of MNP. The researcher has noted however, that research made on the time frames regarding MNP could not conclusively indicate if the short time was an indication of porting success. This study will investigate if porting times in South Africa took longer or shorter than in other countries such as Hong Kong or South Korea, but the determining factor mainly will be the time frame contained in the MNP regulations.

#### **2.5.5 Consumer Awareness**

When MNP was introduced, many countries conducted ex ante and ex post assessment to determine if consumers were aware about MNP and investigated if they were ready to embrace it. Customer Education was included in the regulation framework. An ex post study was conducted in South Korea about the effect of MNP and the research results showed that consumers ported because they were aware about MNP (Lyons, 2006).

#### **2.5.6 Value Added Service**

Value added service includes internet data services and video or picture services which are accessible from mobile connection, all bundled together. This 'triple play' is a competition trend which came as a result of innovation. Initially these bundled were sold separately. For instance, the 3G card at the beginning was sold separately, but due to competition, different operators began to adopt this trend. These days, whether one is a pre-paid or contract, services are the same. Most handsets and services allow for other value added services.

#### **2.5.7 The Switching Costs**

The switching barrier refers to the difficulty of switching to another provider that is encountered by a customer who is dissatisfied with existing service, or to the financial, social and psychological burden felt by a customer when switching to a new carrier (Fornel, 1992). Essentially if consumers continue to encounter switching barrier then they will be forced to remain with their existing operator. (Dick & Basu, 1994) describe them as costs incurred when switching, including time, money and psychological costs.

## **2.6 Summary of the Literature Review**

The literature reviewed shows that MNP had positive and negative effects. Its successes couldn't be conclusively reported as there is no clear measure constituting success with regard to MNP. Most studies mentioned the objectives of introducing MNP as, lowering the costs, enhancing service quality, providing consumer choice and drive competition. Competition was not only concerning price drops but also enhance leveling of the playing ground among MSPs.

In most countries where MNP had been implemented there was regulatory expectation in ensuring that consumers exercise their right to choice. Public education with regard to MNP was to be done by the operators and regulators for informed decisions. With the institution of MNP, consumers who could not end their contract with mobile operators with the fear of losing their number were now free to do. Operators were expected to adhere to the time frames but this expectation was difficult to achieve in many markets due to technical challenges. Fundamentally, operators had to upgrade their technology in order to accommodate all numbers from other operators with different prefixes. The technology used for MNP was also expensive and operators had to incur set-up costs, customer transfer costs, routing costs, and costs for managing the MNP database.

The effects of MNP vary from one country to another and can be summarized as follows: In Finland, subscribers grew by 37% during its 1st quarter of MNP implementation. In Singapore there was low uptake due to the fact that customers were supposed to pay monthly fees to their previous service provider which was a limitation for porting. In UK 20% of subscribers ported their number which was blamed on poor marketing campaigns and delays in porting periods which took about four weeks. Buehler et al (2005) mentioned that the introduction of MNP remained ambiguous as many consumers did not benefit with low success rates reported and implored further academic study on the purpose for the introduction of MNP.

As stated before, prior to the introduction of MNP, consumers were required to give up their numbers when they changed service providers and as a result, they were reluctant to switch (Buehler & Haucup, 2003). In most countries there was some lock-in strategies adopted by MSPs including, continuous exorbitant prices, long contracts and bundled services such as handsets

subsidies. Proponents of MNP technology saw it as a mechanism to change the outlook of the industry but this initiative was not welcomed by market players. Almost in all countries, operators were opposed to the introduction of MNP.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter sets out various stages and phases that were followed in completing the study. It involves a blueprint for the collection, measurement and analysis of data. In this stage, most decisions about how research was presented are outlined i.e. how respondents will be approached, when, where and how the research was carried out. Therefore in this section the research identified the procedures and techniques that were used in the collection, processing and analysis of data. Specifically the following subsections are included; research design, target population, sampling design, data collection instruments, data collection procedures and finally data analysis.

#### **3.2 Research Design**

This research was executed through the use of a statistical cross-sectional survey. This research study allows either the entire population or a subset thereof to be selected, and from these individuals, data was collected to help answer research questions of interest. It allows the collection of large amount of data from a sizable population in a highly economical way. Therefore, the statistical cross-sectional survey is deemed the best strategy to fulfill the objectives of the study.

#### **3.3 Population and Sampling**

The population of study consisted of all the 3 remaining MSPs in Kenya. The study was a census survey targeting IT, marketing, sales management team and customers of the 3 MSPs who participated in a joint MNP development process conducted by CA. These groups of MSP executives were important to the study as they would provide needed information regarding the adoption and the likely cause of low uptake in MNP. The customers would provide a consumer perspective to the study. Table 3.1 highlights estimate number of staff for the 3 MSPs and this study will target 30% for the cross-sectional survey.

**Table 3.3: Estimated number of MSP executive staff as at January 2015**

MSP	IT	Sales	Marketing	Customers
Safaricom	74	8	8	20
Airtel	3	7	8	10
Orange	22	24	12	5
Total	99	39	28	35

Additionally the study aims to collect data from customers of the 3 MSPs in the following breakdown

Safaricom – 20, Airtel – 10, Orange – 5

A senior member of the regulator – Communications Authority of Kenya – involved in the roll out of MNP will be contacted as part of the sample.

### **3.4 Data Collection**

Primary data were collected using a self-administered structured questionnaire (Appendix I) to be served on respondents from all the 3MSPs. The Questionnaire used consists of four sections.

Section A was general information about the organization, and the respondent.

Section B was seeking to examine the impact of MNP technology on the telecommunication industry in Kenya

Section C was seeking to identify the factors influencing MNP technology adoption that may have led to low uptake of MNP technology in Kenya.

### **3.5 Data Analysis**

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 17 and content analysis was used to assist in summarizing the findings. The data was analyzed, summarized in tables and presented using charts according to the sections of the questionnaire. Section A which includes general information about the organization and the respondent, the responses is expected to show as a percentage of each factor and descriptive analysis used to interpret the results.



For Section B and C, cumulative tables were used to sum similar responses. Data was then analyzed using descriptive statistics and factor analysis.

### 3.6 Summary of Research Methodology

As presented in Table 3.2.

**Table 3.4: Summary of analysis techniques**

<b>Objective</b>	<b>Variable</b>	<b>Analysis technique</b>
To explore impact of MNP to MSPs	Consumer switching Implementation costs Cost-benefit analysis CA role in implementation	Statistical cross-sectional Descriptive statistics
To identify factors influencing adoption of MNP in Kenya	Downtime during porting process Customer loyalty Length of porting process Porting cost Customer Awareness Dual SIM handsets Mpesa Price differential Value added services	Factor Analysis

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter presented the analysis and findings of the study. The data is summarized and presented in form of frequency tables. The data collected was analyzed and interpreted in line with the objectives of the study. A total of 97 questionnaires were distributed and 73 questionnaires were responded to making the response rate 75%. This response was considerable and representative of the population. It also conforms to Mugenda and Mugenda's (1999) stipulation that a response rate of 50% and above is adequate for analysis and reporting.

#### 4.2 Background Information

The study sought to find out the position the respondents hold in their organization, period they have worked for their organization, how well they know Mobile Number Portability, if they participate in the Mobile Number Portability needs assessment by CA and their opinion on successful implementation of Mobile Number Portability technology in Kenya.

##### 4.2.1 Position Held in the Organization

The respondents were asked to indicate the position they held in their organizations. The Results are shown in Table 4.1:

**Table 4.5: Position Held in the Organization**

<b>Position</b>	<b>Frequency</b>	<b>Percentage</b>
IT Manager	21	28.8%
Marketing Manager	19	26%
Sales Manager	13	17.8%
Other	20	27.4%
<b>Total</b>	<b>73</b>	<b>100%</b>

As indicated in Table 4.1, majority of the respondents 28.8% were IT managers, 27.4% held other positions, 26% were marketing managers and the least 17.8% were sales managers. This

shows that the respondents were in position to provide accurate data since their organization had participated in a joint MNP development process conducted by CA. This therefore goes to show that the data collected was reliable and relevant for this study.

#### **4.2.2 Years Worked with the Organization**

The study sought to establish the number of years the respondents had worked in their organization. The findings are shown in Table 4.2:

**Table 4.6: Years Worked with the Organization**

<b>Years</b>	<b>Frequency</b>	<b>Percentage</b>
Up to 2 Years	4	5.5%
3-5 Years	19	26%
6-10 Years	41	56.2%
Over 10 Years	9	12.3%
<b>Total</b>	<b>73</b>	<b>100%</b>

From the findings in Table 4.2, majority of the respondents 56.2% had worked for a period of 6-10 years followed by 26% for 3-5 years, 12.3% for over 10 Years and the least at 5.5% for up to 2 years. These findings show that the respondents had worked with their current organizations long enough to understand the adoption of MNP and the factors influencing MNP thus the data collected for the study was reliable.

#### **4.2.3 Mobile Number Portability**

The study sought to find how well the respondents know MNP, participated in MNP needs assessment by CA and their opinion on successful implementation of Mobile Number Portability technology in Kenya. The findings are shown in Table 4.3.

**Table 4.7: Mobile Number Portability**

	Frequency/ Percentage			
	YES	%	NO	%
Do you know what Mobile Number Portability is	73	100%	-	-
Did you participate in the Mobile Number Portability needs assessment by CA	57	78%	16	22%
In your own opinion do you think Mobile Number Portability technology was successfully implemented in Kenya	15	20.5%	58	79.5%

As indicated in Table 4.3, all the respondents knew what Mobile Number Portability was. Majority of the respondents 78% indicated that they participated in the Mobile Number Portability needs assessment by CA while 22% did not participate. On their opinion on whether Mobile Number Portability technology was successfully implemented in Kenya majority 79.5% felt that it was not successful and 20.5% indicated that it was successful. These findings show that the respondents were familiar with MNP and thus the data collected was reliable.

#### **4.3 Adoption and Impact of MNP on the Telecommunication Industry in Kenya**

Several statements on impacts of MNP implementation on mobile service providers were identified against which the respondents were requested to indicate the extent to which they applied them in their organizations. A five point Likert scale was provided ranging from: 1 to 5 indicating the importance of the item with “1” – Strongly disagree to “5” Strongly agree. From the responses, descriptive measures of central dispersion: mean and standard deviation were used for ease of interpretation and generalization of findings. The findings are clearly illustrated below.

**Table 4.8: Adoption and Impact of MNP on the Telecommunication Industry in Kenya**

	Mean	Std. Deviation
Enhanced competition	2.6027	.54619

Improved service quality	3.7123	.45581
Provided consumers choice	3.9178	.27656
Lowering the consumer and operator costs	3.4110	.49541
Increased customer satisfaction	2.8356	.37319

As indicated in Table 4.4, MNP provided consumers' choice had the highest mean of 3.9178 with a standard deviation of 0.27656 followed by improved service quality which had a mean of a mean of 3.7123 and standard deviation of .45581 and lowering the consumer and operator costs had a mean of 3.4110 with a standard deviation of 0.4954. From the findings the respondents were in agreement, this shows that the adoption of MNP had met the consumers' choices, improve quality of services and lower the cost.

Increased customer satisfaction had a mean of 2.8356 with a standard deviation of 0.37319 and enhanced competition had the least mean of 2.6027 with standard deviation of 0.54619. The respondents were in disagreement showing that MNP had brought competition and satisfaction in telecommunication industry in Kenya.

#### 4.4 Factors Influencing Adoption of Mobile Number Portability in Kenya

The study sought to identify factors influencing adoption of mobile number portability in Kenya. The findings are shown in Table 4.5.

**Table 4.9: Factors Influencing Adoption of Mobile Number Portability in Kenya**

	Mean	Std Dev
Lack of consumer awareness	2.6204	1.25837
Complicated porting procedures	3.6389	0.94184
Too long porting times	3.3271	1.01661
The porting cost to the customer was very high	2.5296	1.26235
Impact to customer on losing contacts by porting	3.8148	0.99671
Quality of service provided by other service providers	2.6305	1.25990
Availability of multi-SIMs mobile handsets	3.3333	1.01392

The MNP interface was user not friendly	3.8296	0.96235
MNP implementation cost too high for MSPs	3.8241	0.99371
All MSPs were involved in coming up with the system	3.6204	0.95837
Stakeholder training requirement not adequate	3.3333	1.01392
Pre-implementation testing by all MSPs	3.3426	1.02458
The MNP technology was hurriedly implemented	3.3426	1.02458
All target system development milestones were achieved	3.9121	0.76235
Post implementation monitoring & evaluation was done	3.9611	0.75235
The MNP system had minimal downtime	3.8241	0.99371
The MNP provider had adequate support and resolution	2.6204	1.25837
There were long resolution time for issues raised	3.7593	0.73460
There was proper customer dispute resolution	3.8519	0.80669
MSPs intensity of competition in the market	3.7778	0.89998
Lack of porting information	3.7500	0.75039
Regulator reluctance in enforcing set rules	3.8611	0.81411

As indicated in Table 4.5, post implementation monitoring & evaluation was done had the highest mean of 3.9611 with a standard deviation of 0.75235, followed by all target system development milestones were achieved which had a mean of 3.9611 and standard deviation 0.75235 and regulator reluctance in enforcing set rules had a mean 3.8611 with a standard deviation of 0.81411. The respondents were in agreement that monitoring and evaluation had been done, target system development had been developed and that regulator reluctance in enforcing the rules had influenced adoption of MNP in Kenya.

Lack of consumer awareness had a mean of 2.6204 and standard deviation 1.25837, Quality of service provided by other service providers had a mean of 2.6305 and standard deviation 1.25990 and the porting cost to the customer was very high had the least mean of 2.5296 with standard deviation of 1.26235. The findings shows that the respondents were undecided on whether consumer awareness, quality of service and cost was influencing the MNP in Kenya.

## 4.5 Factor Analysis

Factor analysis is a statistical method used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors (Yount, 2006). The study carried out factor analysis to identify factors influencing adoption of MNP in Kenya. The findings are shown below in Table 4.6.

**Table 4.10: Communalities**

	<b>Initial</b>	<b>Extraction</b>
Downtime during porting process	1.000	.638
Customer loyalty	1.000	.411
Length of porting process	1.000	.643
Porting cost	1.000	.557
Customer Awareness	1.000	.580
Dual SIM handsets	1.000	.594
Mpesa	1.000	.650
Price differential	1.000	.549
Value added services	1.000	.516

Extraction Method: Principal Component Analysis

Communality is the proportion of variance that each item has in common with other factors. The researcher used the principle component analysis as the preferred extraction method; Communalities are shown in Table 4.6. The findings showed that, Mpesa 65%, Length of porting process 64.3% and Downtime during porting process 63.8% have the greatest communality or shared relationship with factors while Porting cost 54.9%, value added services 51.6%, and Customer loyalty 41.1% have the lowest communality with others.

### 4.5.1 Factor Extraction, Factors Influencing Adoption of MNP

Total variance taking all the factors was presented in Table 4.7. Factor extraction was carried out via the analysis of principle component. Eigen values are used to measure the variation amount

in the total sample as accounted by each factor. A factor with low Eigen value implies that it's contributing less to the total variance of the variables and thus may be ignored. According to Table 4.7, only 2 factors were significant for this analysis.

**Table 4.11: Total Variance Explained**

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.986	44.287	44.287	3.986	44.287	44.287
2	1.151	12.792	57.079	1.151	12.792	57.079
3	.928	10.306	67.385			
4	.699	7.772	75.157			
5	.586	6.516	81.673			
6	.577	6.406	88.079			
7	.449	4.991	93.070			
8	.367	4.082	97.152			
9	.256	2.848	100.000			

Extraction Method: Principal Component Analysis.

From Table 4.7, the Kaiser Normalization Criterion was used, which allows for the extraction of components that have an Eigen value greater than 1. The principal component analysis was used and 2 factors were extracted. As the table shows, these factors explain 57.079% of the total variation. Factor 1 contributed the highest variation of 44.287%. The contributions decrease as one move from one factor to the other.

#### **4.5.2 Factor Analysis (Component Matrix), Factors Influencing Adoption of MNP**

Factor analysis of the factors influencing adoption of MNP is presented in Table 4.8 with 2 components extracted. The component matrix represents correlation between the factor and the variable (for instance correlation between value added services and factor 1 is 0.678).



**Table 4.12: Factor Analysis (Component Matrix), Factors Influencing Adoption of MNP.**

	Components	
	1	2
Porting process	.733	.317
Brand loyalty	-.460	.446
Length of porting process	.567	-.567
Porting cost	.694	.273
Customer Awareness	-.761	.015
Dual SIM handsets	.677	.369
Mpesa	.720	.363
Price differential	-.646	.362
Value added services	.678	-.237

The initial component matrix was rotated using Varimax (Variance Maximization) with Kaiser Normalization. The above results allowed for the identification of which variables fall under each of the 2 major extracted factors. Each of the 9 variables was looked at and placed to one of the 2 factors depending on the percentage of variability; it explained the total variability of each factor. A variable is said to belong to a factor to which it explains more variation than any other factor. Thus, any loading used for interpretation should be able to explain large enough variance of the factor.

#### **4.6 Discussion of Findings**

The study sought to examine the uptake of mobile number portability in Kenya. Specific objectives were identified. First, the researcher sought to explore the adoption of mobile number portability (MNP) on the telecommunication industry in Kenya. Research findings showed that MNP adoption provided consumers' with choice, lowered consumer operator costs. Therefore, MNP had brought competition and satisfaction in telecommunication industry in Kenya. It has therefore increased competition in the telecommunication industry through the provision of affordable services. These study results concur with Melody (2003), that indeed competition oriented towards MNP is the driver of low costs, and quality services that leads to customer

attraction and retention. Quality of service is increased whereas services are provided at a lower cost.

The study also sought to identify factors that influence the adoption of mobile number portability in Kenya. It was established that regulator reluctance in enforcing rules, lack of consumer awareness, and quality of service provided by other service and the porting costs to the customers influenced adoption of MNP. The study results concur with Iqbal (2007), that regulatory agencies ought to be independent and powerful in order to ensure that the sector complies with regulations on MNP thus ensuring its overall success. MNP requires technical proficiency and that includes technical proficiency of the regulator (Iqbal, 2007). Delays may be caused by the other service providers even though the initiating firm is fast in service delivery. Lyons (2006) further asserts that one of the main challenges with regard to the implementation of MNP has to do with delays during porting caused by the other telecommunication firms involved in the transfers.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The chapter presents the summary of findings, conclusions drawn from the data findings. In addition, it presents the recommendations of the study. All this had been geared toward achieving the objectives of the study.

#### **5.2 Summary of the Findings**

The study found out that the adoption of MNP provided consumers with a choice to choose from, Increased Competition arises because operators think they will lose subscribers from portability will tend to improve their services or lower their prices. MNP can be seen from the improved customer retention strategies introduced by the service providers through special pricing deals, reward service offers such as points reward scheme adopted by a major market shareholder which has had various offers coming with it, bundling of services and other promotions.

The study further found out that low awareness by consumers on porting procedures, MNP porting cost, lack of porting information and regulator reluctance in enforcing set rules were the main factors that may have led to low uptake of MNP technology in Kenya. The study found out that Mpesa, length of porting process and customer downtime during porting process had the highest shared relationship with other factors comparative service delivery, value added services and switching costs had the lowest communality with others.

#### **5.3 Conclusion**

The study had set out to identify factors that may have influenced the uptake of mobile number portability in Kenya. This was aroused by the fact that it was expected that majority of subscribers would port to reap the benefits of reduced cost of service. This study revealed that customer service offered by current service providers was a great impediment to porting. Regulators reluctance in enforcing rules and lack of consumer awareness impeded mobile number portability. The study concludes that good customer care as perceived by subscribers supersedes incentives such as cost reduction that would be enjoyed if customers switched. The

cost to be incurred by service providers as well as cost incurred by subscribers was also identified as significant factors. The fees attached to porting was considered unnecessary and contributed to delay in the process of porting.

Market instruments such as advertising, sales promotion and added services such as money transfer were affecting the porting process adversely.

#### **5.4 Limitation of the Study**

It was also difficult to access data because some respondents failed to give adequate information. However, the researcher assured them that the information was confidential and would be used only for academic purpose. Time limitation posed a great constrain in carrying out this study. This challenge was handled through rescheduling of the time plan so as to meet the planned activities within the limited time available.

#### **5.5 Recommendations**

The study recommends that the level of awareness was relatively low and therefore there is need to increase awareness informing subscribers of the benefits that would accrue to them if they engaged in the porting process and that the process of porting should be simplified and the cost to be incurred waived off so as to facilitate the process.

Further the study recommends that assurances should be given to subscribers that porting does not result in loss of their current numbers but only a change of service provider and this could alleviate fears of loss perceived by subscribers. The providers may also consider investing in further research on how best to sell the MNP technology to customers and reduce barriers to the access of this service and develop an online porting platform to allow for a wider access to the customers who may be limited by time and location.

Current service providers ought to enhance the quality of their current customer service so that customers do not fear that changes in service providers would lead to inefficient customer care. They ought to readily work towards harmonization of processes so that switching can be smooth and swift to all subscribers.

## **5.6 Suggestion for Further Studies**

A further study to be carried on other factors affecting mobile number portability apart from the uptake of MNP covered in this study. A similar study covering regulator influence in mobile number portability implementation, process and regulation could be a benchmark for any future roll out plans at a macro level.

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## APPENDICES

### APPENDIX I: QUESTIONNAIRE

Dear Respondent,

#### Introduction

Thank you for your willingness to respond to this questionnaire, I am carrying out a research to investigate the low uptake of mobile number portability technology in Kenya. All the information you will provide will be treated as confidential and will only be used for purposes of this study. The final report of this study will not disclose individual names or any other information that may identify you as an individual.

Kindly answer the questions by ticking and explaining where necessary.

#### SECTION A: Background information.

1. What position do you hold in the organization?

IT Manager

Marketing Manager

Sales Manager

Other (Specify) .....

2. How long have you worked for the organization (years).

Up to 2 years

3- 5 years

6-10 years

Over 10 years

3. Do you know what Mobile Number Portability is?

Yes

No

4. Did you participate in the Mobile Number Portability needs assessment by CA?

Yes  No

5. In your own opinion do you think Mobile Number Portability technology was successfully implemented in Kenya?

Yes

No

6. What are the reasons behind your answer to question 5 above?

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**SECTION B: Adoption and impact of mobile number portability (MNP) on the telecommunication industry in Kenya.**

1. How strongly do you agree or disagree with the following impacts of MNP implementation on mobile service providers? (Select a number from 1 to 5 indicating the importance of the item with “1” – Strongly disagree to “5” Strongly agree).

**MNP:**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Enhanced competition	[ ]	[ ]	[ ]	[ ]	[ ]
Improved service quality of service	[ ]	[ ]	[ ]	[ ]	[ ]

Provided consumers choice	[ ]	[ ]	[ ]	[ ]	[ ]
Lowering the consumer and operator costs	[ ]	[ ]	[ ]	[ ]	[ ]
Increased customer satisfaction	[ ]	[ ]	[ ]	[ ]	[ ]

**SECTION C: Factors that may have led to low uptake of MNP technology in Kenya.**

1. Below are factors considered to contribute greatly to the low uptake of InTechnology? How strongly do you agree or disagree that these are the factors which caused low uptake in Kenya.

	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree
Lack of consumer awareness	[ ]	[ ]	[ ]	[ ]	[ ]
Complicated porting procedures	[ ]	[ ]	[ ]	[ ]	[ ]
Too long porting times	[ ]	[ ]	[ ]	[ ]	[ ]
The porting cost to the customer was very high	[ ]	[ ]	[ ]	[ ]	[ ]
Impact to customer on losing contacts by porting	[ ]	[ ]	[ ]	[ ]	[ ]
Quality of service provided by other service providers	[ ]	[ ]	[ ]	[ ]	[ ]
Availability of multi-SIMs mobile handsets	[ ]	[ ]	[ ]	[ ]	[ ]
The MNP interface was user not friendly	[ ]	[ ]	[ ]	[ ]	[ ]
MNP implementation cost too high for MSPs	[ ]	[ ]	[ ]	[ ]	[ ]
All MSPs were involved in coming up with the system	[ ]	[ ]	[ ]	[ ]	[ ]
Stakeholder training requirement not adequate	[ ]	[ ]	[ ]	[ ]	[ ]
Pre-implementation testing by all MSPs	[ ]	[ ]	[ ]	[ ]	[ ]
The MNP technology was hurriedly implemented	[ ]	[ ]	[ ]	[ ]	[ ]
All target system development milestones were achieved	[ ]	[ ]	[ ]	[ ]	[ ]
Post implementation monitoring & evaluation was done	[ ]	[ ]	[ ]	[ ]	[ ]

The MNP system had minimal downtime	[ ]	[ ]	[ ]	[ ]	[ ]
The MNP provider had adequate support and resolution	[ ]	[ ]	[ ]	[ ]	[ ]
There were long resolution time for issues raised	[ ]	[ ]	[ ]	[ ]	[ ]
There was proper customer dispute resolution	[ ]	[ ]	[ ]	[ ]	[ ]
MSPs intensity of competition in the market	[ ]	[ ]	[ ]	[ ]	[ ]
Lack of porting information	[ ]	[ ]	[ ]	[ ]	[ ]
Regulator reluctance in enforcing set rules	[ ]	[ ]	[ ]	[ ]	[ ]