MANAGEMENT OF MOBILE PHONE HANDSET AND OBSOLESCENCE IN KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university

Signature ..... **Date** NOV 15TH 2010

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This research project has been submitted for examination with my approval as the University Supervisor

Signature ..... **Date** 15/11/2010

Michael Mwangi

DEDICATION

This study is dedicated to my husband and my children for their encouragement and support during this study.

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Firstly, I would like to give thanks to the almighty God for granting me the strength, resources and perseverance to pursue this course.

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ABSTRACT

The study investigated the Management of Mobile Phone Handset and Obsolescence in Kenya. Specifically, the study sought to study how this obsolescence has been occasioned by the management – or lack thereof - of the short product lifecycle typical of the mobile phone handset.

From the literature reviewed, the determinants of the product life cycle of an item like the mobile phone handset were found to be inventory management, demand information and sourcing. It is on this back drop that this study was carried out to see how these determinants affect the mobile phone handset dealers.

The study adopted a descriptive research design. A census of 41 mobile phone handset dealer shops within Nairobi Central Business District formed the study population. Data was collected by use of structured interviews guided by a questionnaire. Data was analyzed through SPSS version 15.0 and was presented using descriptive and frequency tables, pie charts and graphs.

The research found that mobile phone dealers are facing the challenge of obsolescence based on lack of timely, accurate and actual information sharing with suppliers. From the findings the study made recommendations on avoidance of dead stock through the employment of proper and sustainable strategies of dealing with obsolescence. These include supplier involvement strategies on planning, sales and marketing processes. Further, the study recommended that in instances where obsolescence is unavoidable proper management approaches must be applied such as recycling.

The study would suggest that further studies be done to investigate easy and sustainable approaches that mobile phone dealers can employ to avoid and deal with obsolescence. This kind of study would build on the existing body of knowledge and give greater insights on e-waste management, a great concern for the 21st century.

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CHAPTER ONE: INTRODUCTION

1.1. Background

Businesses exist to serve the needs and wants of people, in a way that will make them keep coming back for more. The adage 'customer is king' still holds to this day, thus businesses globally aim to have customized products that are of the right quality and quantity at competitive prices, to ensure that their customers stay loyal. Over time businesses have found that a product's life cycle may determine how easy it is for competitors to emerge, and how good a firm is at keeping its own product relevant and attractive to consumers (The Times 100, 2010). Majorly, the product life cycle has four stages Introduction; Growth; Maturity and Decline. These different stages have different repercussions on the sales revenues for a firm. Thus proper analysis and management of the product life cycle is a key competitive necessity in today's no-room-for-error business arena in order to create value and competitive advantage. (Murray, 2009) notes that senior management has to define a strategic direction when considering the products that the company should manufacture and offer to their customers.

As product cycles mature or products sales decline, management has to make strategic decisions to develop and introduce new versions of existing products into the marketplace. Management has to analyse whether to rationalize the current product offering or whether to develop a completely new range of products and services. High-tech products like computers and cell phones, high fashion apparel, underutilized capacity, fruits and vegetables, loses value over time (Chopra & Meindl, 2007). This is based on their quick or short life cycles and in such instances, the

challenge for any firm is to ensure product availability while keeping product obsolescence low (Fisher & Raman, 1999).

1.1.1. Management of Mobile Phone Handsets

Businesses that want to maintain their competitive advantage by developing and sustaining customer loyalty or customer centricity (Accenture, 2009), manage their products over time to ensure that they deliver products that continue to meet customer wants. The management of the entire lifecycle of a product from its conception, design and manufacture to service and disposal is critical for the firm's survival. This is aimed at addressing such challenges as stock outs, high inventories due to overstocking, long lead times and other inefficiencies. Chopra & Meindl (2007) advance that the objective is to ensure that the following are met for the customer at all times; cost and customization, right quality and quantity, acceptable response times by customers, variety of products needed, service level required, price of the product, desired rate of product innovation and development. With the above ensured, then the organization experiences high customer retention, brand loyalty, top of mind awareness of product in market and brand equity as a whole.

Due to its nature of constant dynamism, fast growth, cut-throat competition and the speed of the technological and market forces propelling it, the telecommunications industry in Kenya and the firms in it must manage growth and the impending challenges on quality of service, operator capacity and average revenue. Specifically on the product line of mobile phones, telecommunications firms need to constantly reshape themselves in order to ensure that they not only stay on top of the competition, but also gain and expand their revenue share. Mobile phones have undergone a huge change from being an engineering product to become one of the

most popular consumer electronics products. The global market for mobile phones is immense with nearly 1billion people using a mobile phone right now, and a growth of 50 to 60 percent a year (Catalan & Kotzab, 2003).

Over time the mobile phone industry has become volatile due to the constant technological changes and the ever changing customer preferences. Bechtel (2001) observes that mobile phones combine volatile, unpredictable demand, short product development cycles, high design and manufacturing complexity, and a multi cultural, global market that makes contract manufacturers, distributors and component suppliers find it difficult to be successful. This in essence means that there is no or little margin for error in forecasting as errors result in high instances of product obsolescence. Panic can easily set in when demand becomes scarce (Bechtel, 2001). Mobile phones become obsolete due to technical, functional and style related purposes. This is because over the years, the mobile phone has had technological advancements, phased out models due to wear and tear and more aesthetically appealing models. With over 1.5 billion mobile phone subscribers in the world, the rate of disposal is great as general consumer behaviour suggests frequent replacement of mobile phones (Tan 2005). Without proper channels of disposal, this can be dangerous for the sellers and for the environment too.

1.2. Mobile Phone Industry in Kenya

The mobile phone industry in Kenya has made very huge contributions to the economy in terms of direct investment, employment and the growth of the support service sector. The general public has been treated to concerted competitive initiatives by telecommunication service providers in the form of adverse advertising messages against each other, introduction of new products and services, promotion initiatives in

terms of air time and handsets, attractive offers for customers and price wars among others. With unregulated imports to Kenya, traders import both new and second hand (refurbished) phones at an alarming rate. This has resulted into a cut-throat competition among the identified dealers and the traders as increased choice for customers increase. In a bid to take advantage of the booming business in the mobile telecommunication industry many traders have opened shops or outlets that sell a variety of mobile phone handsets and accessories as well as provide services for the same.

1.2.1. Obsolescence

This is evidenced by the presence of mobile phone handset outlets in most estates, streets and lanes, especially in urban areas in Kenya. The environmental challenges, economic slump, increased competition; changes in government fiscal policy and the ever changing telecommunication technology have all had a toll on the traders as obsolescence becomes a reality to be contended with. Most traders prefer to make outright purchase to take advantage of cash sale; others import their own goods, while a few are managed by the telecommunications providers. There are many known mobile handset brands in Kenya, such as Nokia, Motorola, Samsung, besides the many Chinese and Indian brands that have penetrated the Kenyan market. A general decline in popularity precedes the obsolescence of a particular handset/gadget whereby it is no longer wanted by the market even though it may still be in good working order. Previously a darling of the public handsets such as Nokia 3310, Chinese ZTE (Kabambe), Motorola L6 and L7 have undergone a drastic turn of events from rising popularity to a decline in the same to the shock of many unprepared traders. Most customers in Kenya prefer to stay up-to date with the newer

versions of mobile handsets, with the old ones kept or passed on while a few are also lost, stolen or thrown away.

1.2.2. Disposal of Obsolete Mobile Phone Handsets

Due to the nature of the industry, traders are therefore incurring some costs in obsolete and/or slow moving stock as most of the mobile phones handsets, battery, and accessories are not produced or recycled in the Kenya. In addition, unlike many countries of the West, most developing countries do not have mechanisms of disposing electrical gadgets such as the mobile phone. Countries like Sri-Lanka, Nigeria, Vietnam are yet to wake up from the perils of toxic waste (Envis, 2006). Rapid technology change, low initial cost and even planned obsolescence result in a fast growing problem around the globe whose technical solutions though available maybe frustrated by lack of a legal framework, a collection system and other related logistics (Envis, 2006).The future of the retailers' business will depend on how well they are going to adjust and manage their inventory to cope with the volatile environment that is technology based.

Presently, Kenya has at least 107 mobile phone dealer shops (Yellow Pages Kenya, 2010). With the growth of the mobile phone industry, numerous shops selling mobiles have sprouted in the central business district and the estates, leading to thinning revenues against high operational costs (Juma, 2009). Due to the proliferation of dealers all over urban areas, Juma (2009) notes that, "the mobile handsets business is going through a transformation with smaller dealers finding it difficult to survive in the highly competitive market." This has led to high incidences of obsolescence on the old stock and the "harsh economic environment and a heightened competition have made it difficult to count on mobile sales alone" (Juma,

2009). This project sought to study how this obsolescence on the mobile phone industry has been occasioned by the short product lifecycle of mobile phones.

1.3. Statement of the Problem

The growth in the use of the mobile phone has resulted in many mobile phone innovations in the market both globally and in Kenya. For instance, with globalization and increased accessibility to electronic delivery channels for products and services, banks are continuously innovating to provide a wide range of electronic products and services. Technological advancements have and continue to increase the growth of mobile phones in Africa as a whole (Butunyi, 2010). Butunyi (2010) also observes that such technological developments such as the 3G network has enabled deployment of advanced applications such as video conferencing, mobile TV services and tele-medicine that require high speed connections. This has also increased the uptake of mobile phone technology.

It is expected that this technological advancement will contribute significantly towards the economic development of the continent. The immediate consequence of such advancements in mobile technology is a prevalent change in customer preferences on which mobile phone to own. Given that most of the mobile phone users are demographically young, the preference is then to have a mobile phone that can take up more roles beyond just making calls and exchanging text messages (Butunyi, 2010). Using banking as an example, customers presently prefer to have mobile phones that allow for mobile banking services and products such as viewing of statements of accounts, enquiries on status of cheques, cheque book requests, notification of entries into accounts, transfer of funds between designated accounts and utility payment services (Central Bank of Kenya, 2009). As a result, dealers in

mobile handsets have to continually acquire new and upgraded handsets, to retain their customers in spite of having old stock.

There is evidence of research done on the telecommunications industry in Kenya mainly looking at strategic responses by the industry to the environment or to competition such as that done by Kipkurui (2008) and Karanja (2008). There is still need for further research on the mobile phone industry in Kenya vis-á-vis the length of the product life cycle of the mobile phone in a dynamic market such as Kenya. This is especially so on short product development cycles caused by volatility and unpredictable demand. This demand creates various challenges of obsolescence in the realization of profits. Thus, this project was guided by questions with respect to product life cycle: what is the level of mobile phone handsets' obsolescence in the Kenyan Market? What inventory management methods are used by the mobile phone dealers? What methods are used by the dealers for disposing obsolescent mobile phones?

1.4. Research Objectives

The purpose of this project was to investigate the effect of short product life cycle to obsolescence costs for mobile phone dealers in Kenya. The project sought to realize the following specific objectives:

1. To determine the level of obsolescence for the mobile phones handsets dealer in Kenya;

2. To determine what inventory management methods are used by the mobile phone dealers;

3. To determine various methods available for disposing obsolescent mobile phones.

1.5. Value of the Study: Contribution to theory and practice

This research is deemed to be beneficial to a number of stakeholders; these include academicians, practitioners and policy makers in the following ways:

1. To the academicians, practitioners and policy makers it will bring forth knowledge on the existence of the challenge of obsolescence in this dynamic and fast moving telecommunication industry;
2. To the academicians it will spur more studies on any measures that have been put in place to deal with this challenge and others associated with it such as e-waste management in the country;
3. To the practitioners it will add knowledge on how to manage high demand, unpredictable and volatile products such as the mobile phone;
4. It will provide policy makers with a framework to regulate the mobile phone industry.

CHAPTER TWO: LITERATURE REVIEW

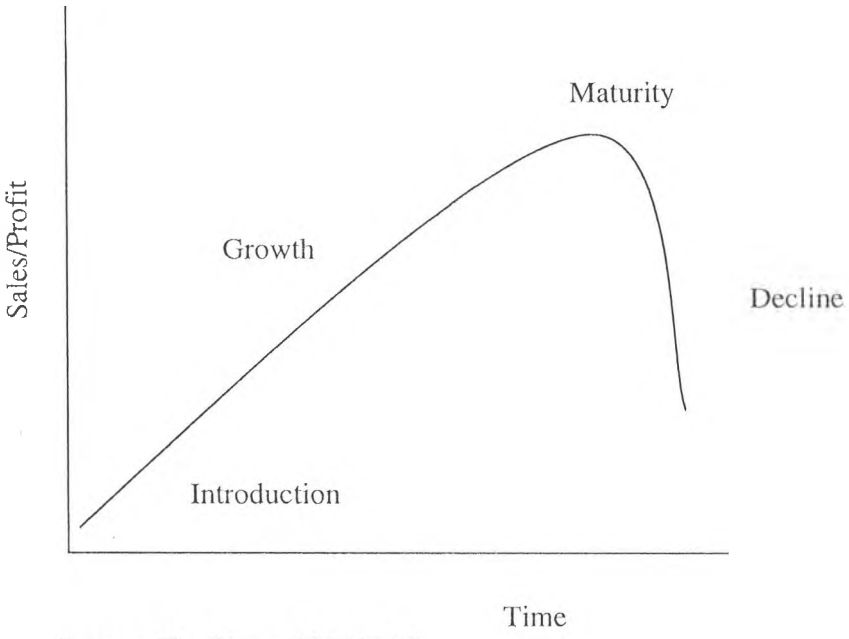
2.1. Introduction

The purpose of this research was to investigate the effect of short product life cycle to obsolescence costs for mobile phone retailers in Kenya. Chopra & Meindl (2007) comment that any asset that loses value over time, such as high-tech products like computers and cell phones, high fashion apparel, underutilized capacity, fruits and vegetables, is perishable. This is based on their quick or short life cycles. In cases of products with short lifecycles, the challenge for any firm is to ensure product availability while keeping product obsolescence low (Fisher & Raman, 1999). Amongst the determinants of this include inventory management, demand information and sourcing (Chopra and Meindl, 2007). This chapter reviews the literature available pertaining to the product life cycle and the variables affecting its competitiveness.

2.1.1. Product Life Cycle for Mobile Phones

The PLC is a model that illustrates the different stages that a product or service will pass through with each stage having its own attributes and length in time (Small Business, 2009). Majorly, the product life cycle has four stages introduction; growth; maturity and decline.

Fig 2.0: Product Life Cycle

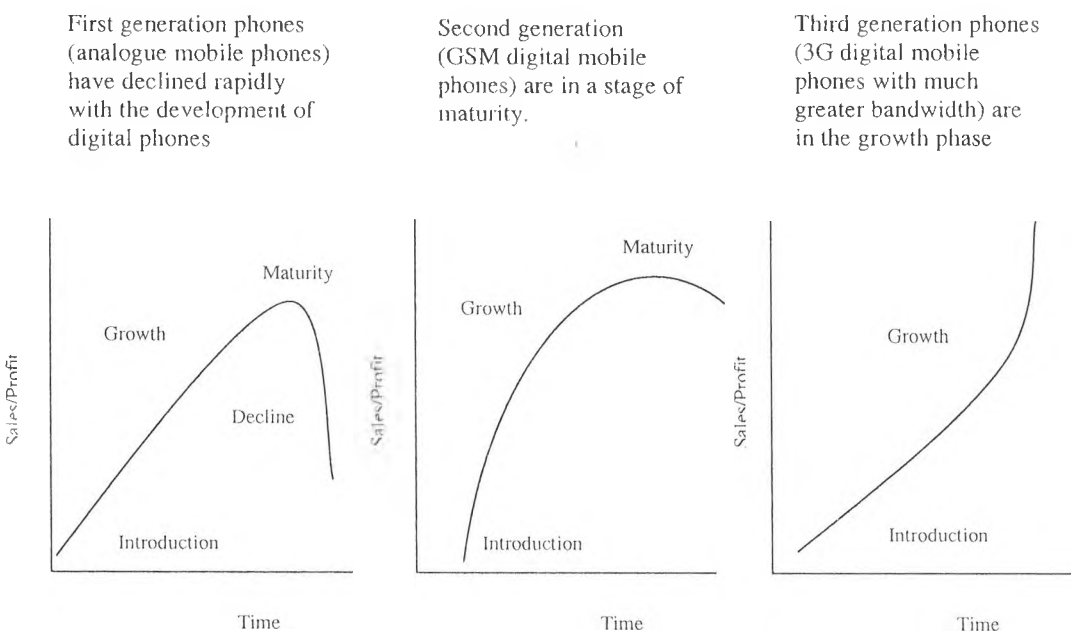


Source: The Times 100 (2010)

Initially, when a new product is introduced to the market, consumers may have little awareness and a business must engage in promotional activity for the product. With time the product flourishes and more people find out about the product and purchase it. However, as new competitors come into the market and as excitement about the product reduces, the product gets to maturity. With the saturation of the market, interest in the product begins to decline. The mobile phone market fits this pattern.

At each stage there is a close relationship between sales and profits so that as organisations or brands go into decline, their profitability decreases (Small Business, 2009). The different stages have different repercussions on the sales figures for a firm. The figure below illustrates this relationship – between the various stages of the product life cycle and the sales figures – in the mobile phone industry:

Fig 2.1: PLC and Sales



Source: The Times 100 (2010)

2.1.2 Mobile Handsets Inventory Management

Dooley (2005) argues that the focus point and the linchpin of success in a firm is the management of inventories and inventory control. Inventory contains the raw materials, the work in process and all the finished products of a supply chain (Felea, 2008). Felea (2008) continues to suggest that inventory management is challenging because it directly impacts both cost and service. The overall trade off that managers face when making inventory decisions is between responsiveness – high levels of product availability for the customer, which increases cost as a lot of inventory is held but never used – and efficiency – low levels of product availability for the customer,

which decreases cost but results in a higher fraction of customers who are not served on time (Chopra and Meindl, 2007).

Uncertainty in demand and supply make it necessary to hold inventory at certain positions in order to provide adequate service to the customers. As a consequence, increasing inventories will increase customer service and revenue, but it comes at higher cost. Dooley (2005) observes that the management of inventory varies by stage in the product life cycle (introduction, growth, maturity, and decline). During introduction, logistics must support the business plan for product launch, while preparing to handle potential rapid growth by quickly expanding distribution. At market maturity, the logistical emphasis shifts to become cost driven. In the decline stage, cash management, inventory control, and abandonment timing become critical. Over-abundance of products in the late maturity or decline stage will eventually result in obsolete products. Fluctuations in demand certainty - uncertainty during the introduction and growth stages, relative stability during maturity, and so on - drives forecasting accuracy and the level of safety stock required to meet customer service expectations.

With a volatile product such as mobile phones and computers, if the demand shaping is not done right a firm is liable to have a ton of excess material write-offs especially for new technologies or new product lines. Over the past several years, companies across a wide range of industries have adopted demand-driven supply networks, using the "pull" of actual customer demand rather than the "push" of available supply to manage their network of suppliers, materials and components from manufacturing to distribution (UNISYS, 2010). Textbooks on forecasting or inventory management models assume demand patterns that are stable with limited variability (Fisher

&Raman, 1999) which is not the case with products with short lifecycles. Fisher & Raman (1999) further observe that the cost of carrying inventory is thus much higher for short lifecycle products because of the risk of obsolescence. Ultimately, companies should aim at having just enough inventories to satisfy consumer demand.

2.1.3 Information Sharing Between Suppliers and Dealers of Mobile Handsets

Successful implementation of any business process depends heavily on sound business processes and interpersonal relationships. A purely technical solution without regard for people involved is unlikely to deliver the benefits, Waller (1999). Effective team work is required with participation by manufacturer and retailer. Moreover, trust between the supplier and buyer partners is critical. Kumar & Kumar (2003) rightly observed that the supplier integration or involvement processes involve exchange of critical and sensitive information between retailer and supplier, which if not shared or not accurate as per the established guidelines, will have severe impact on the overall success of the process.

The smaller the number of supply chain intermediaries allows for a faster response to customer requests, as well as easier sharing of information. Studies have shown that information visibility and rapid data availability is a key element of agility in a business, as are collaborative relationships between retailer and supplier. Further, there is need for precise knowledge and information exchange about real customer demand especially for products with short life cycles. Exchange of information in real-time about consumer demand and component supplies, surprises can be avoided (Bechtel, 2001). Catalan & Kotzab (2003) observe that the main influence on a negative responsiveness on a given product is the lack of close collaboration and integration between relations between the buyer and the supplier.

Scholars have argued that close relations often are difficult to handle in instances where a retailer has several suppliers for several products due to complexity and high uncertainty contained therein. Thus proper information exchange determines the response to a wide range of quantities demanded and the lead time for given products. There is a clear correlation between stock outs and implied demand uncertainty by the customers (Chopra& Meindl, 2007). Highly capricious products - such as mobile phones - tend to have uncertain demand. An overarching component that would lead to proper information sharing is the effective use of Information Communication Technologies (ICT). Keh & Park (1997) suggest that effective use of ICT can replace extensive commitment to inventory holdings. Thus, investment in technical capability and technological know-how is essential to attract and maintain business with the right partner.

2.1.4 Supplier Sourcing and Selection for Mobile Handset Dealers

Laxton (2010) defines sourcing as the component whose goal is to minimize supply related costs. It is aimed at getting maximum advantage of cost, process, quality and technology, by leveraging the company's buying power. Sourcing involves a continuous relationship between buyers and suppliers which is a beneficial collaboration for both parties and has such advantages as cost savings, standardized pricing, access to new suppliers and vendors, increased operational efficiency, set purchasing procedures and a relatively shorter cycle time (Laxton, 2010). In their study, Pero *et al* (2010) found out that firms use flexible sourcing strategies with a larger supply base and lower level of supplier integration due to high demand volatility, and high volume and mix uncertainty. Flexible sourcing strategies focus on

having contracts with suppliers on whom the buyer can influence their performance in terms of delivery frequencies, quantities and lead times.

The importance of strategic sourcing cannot be understated in the product life cycle, as discussed by Pero *et al.* (2010) in which they observe that in an example of a product in the design phase, the product to be manufactured and distributed determines a large portion of the supply costs. Bakker *et al.* (2002) note that good sourcing processes and sourcing as a true strategic function can help a company to realize up to 25% in savings and can in some cases help to increase revenue. Many researchers agree that sourcing is a strategic function that must have a framework of implementation for different products or for products in different stages, lest the company acquires challenges in communication and delivery. Additionally, for products with short life cycles it is important to choose suppliers not based on cost but on speed and flexibility of delivery (Fejerskov, 2005).

2.1.5. Obsolescence and Disposal of Obsolete Mobile Phone Handsets

Mobile phones become obsolete due to technical, functional and style related purposes. This is because over the years, the mobile phone has had technological advancements, phased out models due to wear and tear and more aesthetically appealing models respectively. Most phones have a market life cycle of 9 to 24 months (Choney, 2010), leading to high obsolescence rates as the expansion of mobile industry continues. With over 1.5 billion mobile phone subscribers in the world, the rate of disposal is great as general consumer behaviour suggests frequent replacement of mobile phones (Tan 2005). In addition, many companies need consumers to continuously purchase their products and if their consumers stop buying after one purchase that company will probably not last very long (Cade, 2010).

As such many of the products on sale do not last long. This can be dangerous when it comes to electronic equipment such as mobile phone handsets. However in a bid to manage electronic waste, manufacturers can use materials that can be reused, upgraded, easily disassembled, or made from other products (Cade, 2010). Other ways of managing electronic waste such as phone handsets include landfill, where the waste is piled up and covered with other domestic waste and soil (Envis, 2006). Understanding the complex interactions between energy and material throughout the life of a product, and thinking in the long term about the impacts these interactions will have on the environment and society is imperative for businesses that want to remain sustainable (Natural Edge, 2006).

2.2 Critique of Existing Literature

There is consensus on the importance of proper analysis and management of the product life cycle for increased revenue growth and general sustainable growth of any enterprise. Nevertheless there have been criticisms on the theories and principles advanced by various studies done over time. In some studies product life cycle management models have become the target of severe criticism citing the complexity of business decisions that cannot allow for simple recommendations for a given business process. Dubois & Pedersen (2002) note that by simplifying the issue of buyer-supplier relationships, portfolio models fail to capture vital aspects, such as the context of networks the interdependencies between products and the concern for sustainable competitive advantage through inter-firm relationships.

Fisher & Raman (1999) begrudge the fact that at a time when rate of product innovation has increased dramatically in many industries making products that had long lifecycles such as telephones and computer to have much shorter lifecycles,

textbooks on supply chain management models assume demand patterns that are stable with limited variability. This results in unpreparedness to generate better approaches to manage supply chains of innovative, short lifecycle products. In addition many studies have not addressed problems of information distortion that may arise as information moves across the supply chain, especially with the increased amount of product variety in most firms today.

2.3 Summary

Different approaches in the management of the determinants of a product's life cycle such as inventory management, information flow and sourcing determine the performance of a firm (Chopra & Meindl, 2007). Different drivers or determinants are applied at different stages of a product's lifecycle. For example, during introduction stage of a product, logistics must support the business plan for product launch, while preparing to handle potential rapid growth by quickly expanding distribution (Dooley, 2005). The key to success is coordination of the different drivers with clear knowledge of the impact of each towards realization of profits. In an industry such as telecommunications, proper coordination is a must for gains to be realized as the telecommunications industry is characterized by constant dynamism, fast growth, cut-throat competition and the speedy technological changes. Firms in this industry can stay ahead of the game by ensuring that there are appropriate approaches for all products such as the mobile phone which is a volatile product that have uncertain demands and short life cycles.

2.4 Research Gaps

There is extant research studying the efficiencies in the management product life cycles with regard to the product nature, such as that done by Stavrulaki & Davis

(2009), in which they found out that high volume, low demand uncertainty products should be matched with lean supply chains enabled by efficient processes, whereas low volume, high uncertainty products should be matched with agile supply chains enabled by flexible processes. There are also several studies on the telecommunications industry in Kenya mainly looking at strategic responses by the industry to the environment or to competition. Kipkurui (2008) carried out a case study on one of the service providers, Telkom, to see how it dealt with competition. He observed that the company was battling internal and external challenges that hindered its ability to compete effectively on the market. Karanja (2008) found out that the telecommunications industry in Kenya faces many challenges due to the constantly changing environmental changes such as liberalization of the sector, social reforms, political anxieties and technological advancements.

Studies have also been done that are specific to consumers and their adoption of mobile phones. Gacugu (2007) found that consumers take into consideration various aspects when purchasing mobile phones. These include marketing aspects such as price, place, promotion and product as well as technical aspects such as the network capability for the regular travellers, operating systems, phone accessories for convenience and extra services such as the GPRS connectivity, the USB/Bluetooth, infrared and ergonomics. On the same issue Koskei (2007) established that the adoption of mobile phones was influenced by mobile phones characteristics, personal and family factors as well as organizational characteristics but to varying degrees of importance.

There is still need for further research on the mobile phone industry in Kenya vis-á-vis the length of the product life cycle of the mobile phone in a dynamic market such as Kenya. This is especially so on short product development cycles caused by

volatility and unpredictable demand that creates various challenges of obsolescence and in the realization of profits. Lo & Power (2010) have called on further investigation of the influences of product characteristics, based on the product life cycle stages, on the supply chain management strategies. This project will therefore add to the literature review based on its findings on the effect of short product life cycle to obsolescence costs for mobile phone retailers in Kenya.

CHAPTER THREE: METHODOLOGY

This chapter explains in detail the research design, target population, sampling and sample size, data collection method and procedures as well as data analysis used in this study.

3.1. Research design

The study employed a descriptive survey research. The descriptive approach was considered the most appropriate for this research because descriptive studies report the way things are for understanding the status quo (Mugenda & Mugenda, 1999), and often result in formulation of important principles of knowledge and give solutions to significant problems (Kombo & Tromp, 2006). Kumar *et al*, (1993) notes that this approach is consistent with the general recommendation to use informants who are most qualified to report on the issues under investigation.

3.2. Population

The target population of the study was the 73 mobile phone handset dealers (Yellow Pages Kenya, 2010) in Kenya who are located in the Nairobi City Centre. These dealers are strategically located and are thus easily accessible enabling them to sell their stock to the wholesalers as well as directly to customers.

3.3. Sample design

The research employed a census i.e. all the researcher sought to engage all the 71 mobile phone handset dealers. The researcher found that of the 71 dealers in the list, 30 shops were no longer in existence. Thus the research engaged 41 mobile phone handset dealers and received responses from 28 of them. .

3.4. Data collection

The subjects of the study were the dealer shop owner and/or staff in the respective shop. A questionnaire was used to gather information about the population. The researcher used a Likert questionnaire administered through structured interviews. The questionnaire began with the general information on part A which helped in profiling the dealers. Part B of the questionnaire provided data on the level of obsolescence among the dealers. This was followed by part C which sought to gather data on inventory management methods in use. The questionnaire ended with part D which sought to collect information on the various methods available for disposing obsolete mobile phone handsets.

A pilot study was done on three respondents. The purpose of the pilot testing was to establish the accuracy and appropriateness of the research design and instrumentation and therefore enhance validity. After the pilot study, the main survey followed.

3.5. Data analysis

The data collected was analysed through quantitative and qualitative techniques. The Statistical Package for Sciences (SPSS) was used for the analysis. The data was first coded to allow for analysis. The data collected using part A of the questionnaire was used to profile the dealers. The information gathered in part B sought to address objective one, which seeks to determine the level of obsolescence for mobile phone handset dealers in Kenya. The frequency of occurrence of the make and model assisted in ranking, while averages and percentages expressed the level of obsolescence.

Objective two sought to determine the inventory management methods in use by the dealers and was addressed using data collected by the questionnaire in part C. The

averages of the preferred methods of inventory management will be used for ranking them accordingly. The third objective sought to determine the various methods available for disposing obsolete mobile phone handsets. The frequency of occurrence and the average of a disposal method assisted in the ranking. Data was presented in the form of frequency counts, percentages, graphs and pie charts (Cooper & Schindler, 1998) for ease of interpretation. The final report was then compiled using MS-word after subjecting data into thorough analysis.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Introduction

The study sought to investigate the effect of short product life cycle to obsolescence costs for mobile phone dealers in Kenya. This chapter contains the findings of the study and discussions on the findings. The data obtained from the research instruments was analyzed by use of SPSS and was then presented in form of tables, charts and graphs.

4.2. Response Rate

The findings are based on data collected from 28 mobile phone dealers in Kenya. This was the sample from target population of 41 mobile phone dealers. This represents 68% response rate, which is a fair representation of the population. According to Kombo & Tromp (2006), the researcher must select at least 10% or 20% of the population to form the sample for the findings of the study to be valid. Table 4.0 shows the response rate of the respondents that participated in the survey.

Table 4.0: Response Rate

Respondent	Population	Achieved Sample	Response rate
Mobile Phone Dealers	41	28	68%

4.3 General Information

This section sought to have a representation of the mobile phone handset shops that formed the achieved sample. It looks at the profile of the respondents, the number of years of operation and geographical coverage of the shops.

4.3.1. Position of Respondents at the Company

Fig 4.0: Positions of Respondents

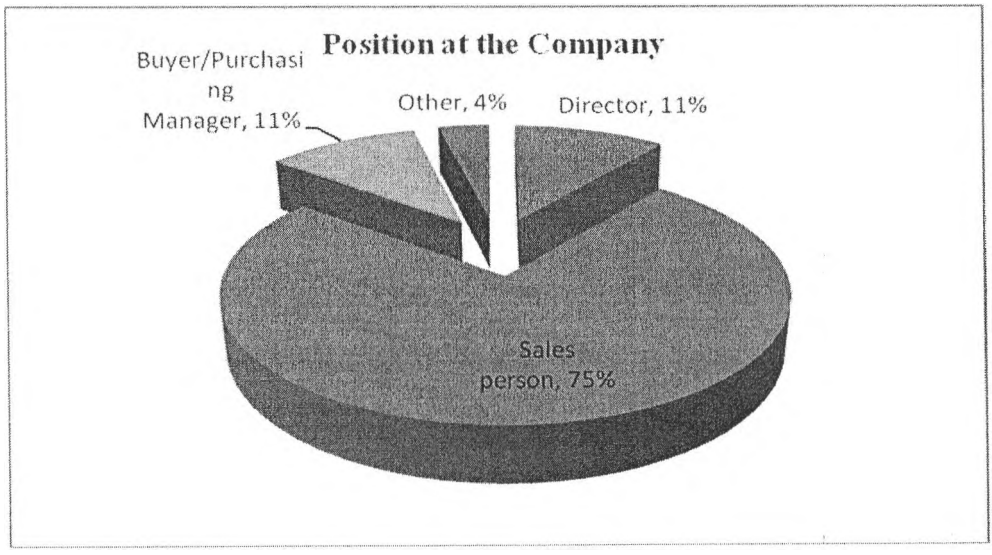


Figure 4.0, illustrates that most of the respondents, 75%, were those who held the sales positions. In a few firms, about 20%, the respondents were in directors and buying or purchasing managers.

4.3.2. No of years the dealer has been in operation

Fig 4.1: No. of years of Operation

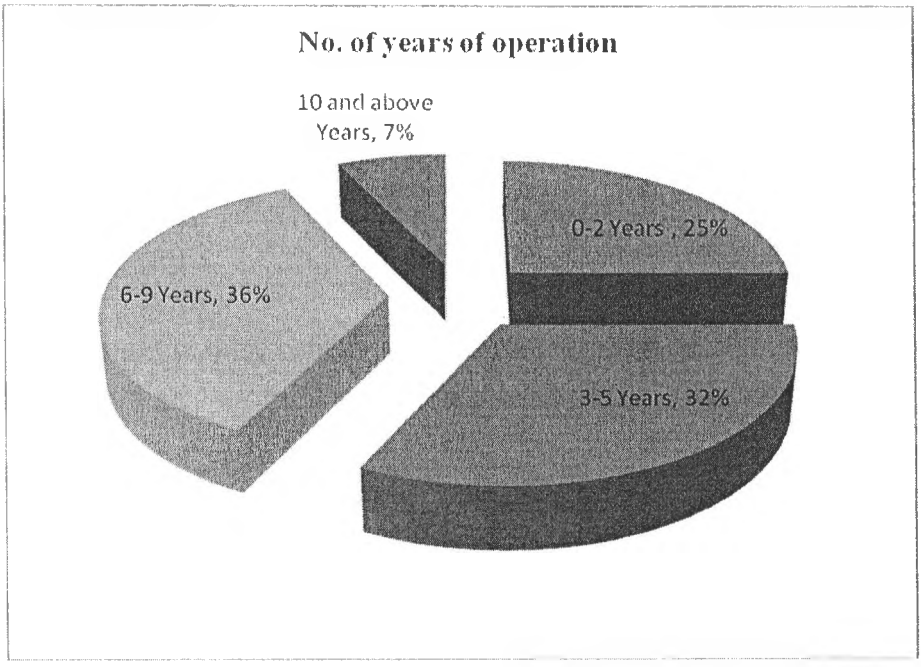


Figure 4.1, illustrates that most of the mobile phone dealers have been in operation between 3 to 5 years, about 32% and 6 to 9 years which represented 35% of the firms on which the questionnaire was administered. Only 7% of the firms had been in existence for 10 years and above.

4.3.3. No of towns the dealer covers

Fig 4.2: No. of Towns Covered

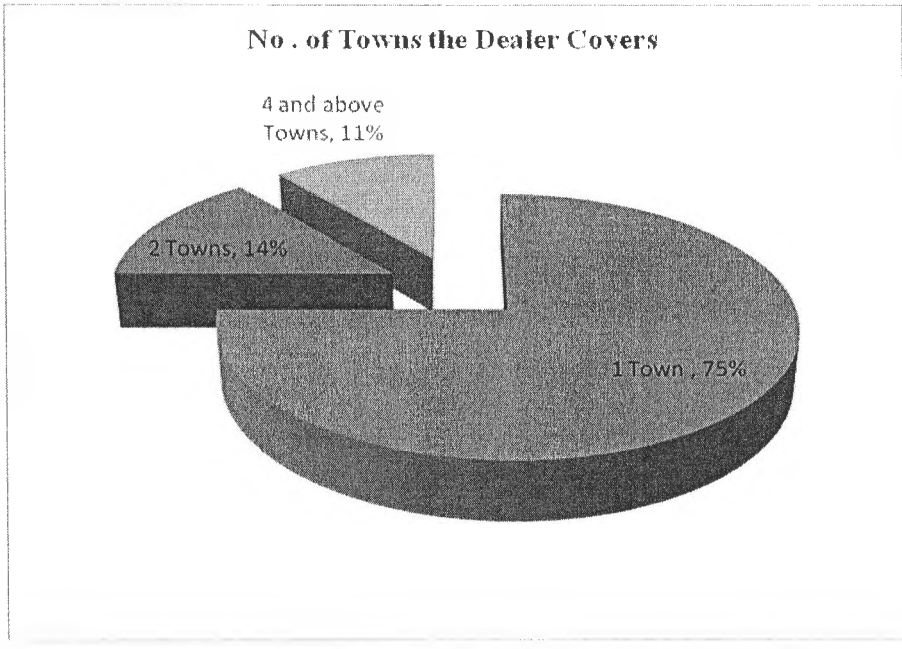


Figure 4.2, shows that most of the firms operate in only one town. These firms represented 75% of the firms that took part in the research. None had coverage in 3 towns and 14% and 10% had coverage in 2 and 4 or more towns, respectively.

4.4. Findings Specific to the Study

This section looks at the findings relating to level of obsolescence, inventory management and inclusion of suppliers in the mobile phone handsets shops planning and marketing strategies as a means of managing dead stock.

4.4.1. Information on level of Obsolescence

Fig. 4.3: Slow Moving Mobile Phones

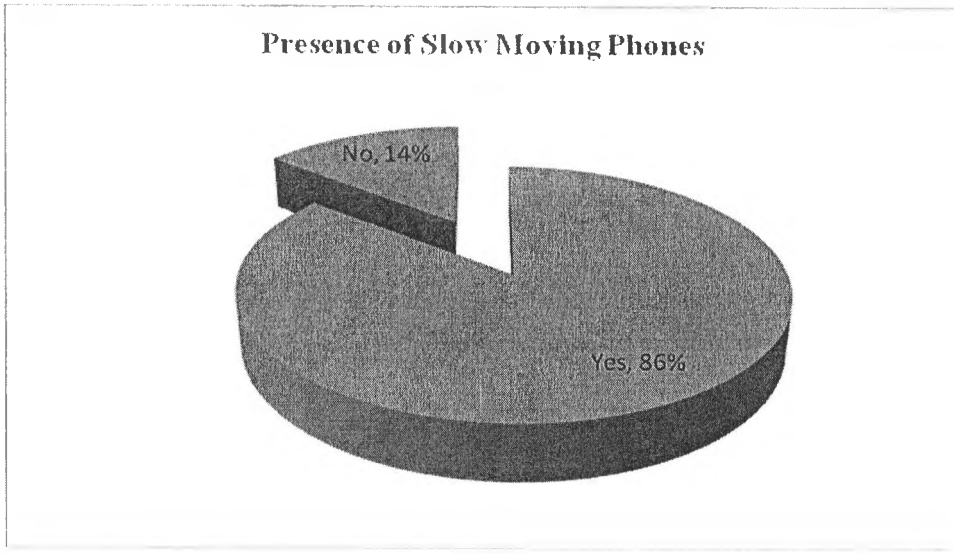


Figure 4.3 shows that over 85% of the mobile phone dealers have obsolete or slow moving mobile phones. Only 4 of the 28 firms did not have a problem with obsolescence. Most of the traders sighted some Nokia and Motorola models as being particularly slow moving stock. Other phones that have high level of obsolescence include Siemens, Panasonic and G-Tide.

Fig 4.4: Frequency of the Slow Moving Mobile Phones

Phone	**Mode**
Motorola	23
Nokia	14
G-Tide	4
Siemens	3
China V100, V6	2
LG	2
Alcatel	1
Panasonic	1
Samsung	1
Sony Ericsson	1
Techno	1

Figure 4.4 shows the frequency of the phone models that the mobile phone handset dealers sighted as slow moving. It shows that Motorola and Nokia models have the highest incidence of obsolescence.

4.4.2. Inventory Management: Access to New Mobile Phones

Table 4.2 illustrates that over 67% of the mobile phone dealers have dead stock at the end of each trading period. This can be attributed to the fact that only about 3% of the firms buy reusable products and less than 30% of the dealers buy stock that is easily upgraded. In addition over 50% of the mobile phone dealers do not buy their stock from suppliers who would take back dead stock. To compound this problem only about 39% of the traders have disposal models for dead stock with about 43% of the dealers being ignorant of the need or existence of disposal models for dead stock.

Table 4.2: Inventory Management: Access to New Mobile Phones

Construct	Freq. High Negative	Freq. Negative	Freq. Neutral	Freq. Positive	Freq. High Positive	Conclusion
Find desired phone	1 4%		1 4%	10 36%	16 56%	56 % strongly agree
Over half of stock sold each month	1 4%		2 7%	12 43%	13 46%	About 89% sell over half of stock
A lot of phones	1 4%	2 7%	1 4%	19 68%	5 17%	Over 85% of the firms

remain each month						have phones remaining
Stock is from suppliers with reusable products	6 21%	13 46%	8 29%		1 4%	Only about 33% of the firms agree
Buy from suppliers who take back obsolete stock	14 50%	9 32%	1 4%	2 7%	2 7%	Over 82% of the mobile phone dealers do not agree
Stock from suppliers with easily upgraded products	7 25%	13 46%		6 21%	2 7%	Less than 30% buy stock that is easily upgraded
Presence of a disposal model	3 11%	2 7%	12 43%	8 28%	3 11%	About 39% are not aware of disposal models

4.4.3. Information Sharing with Key Suppliers

100% of the mobile phone dealers have integrated systems of information sharing with their key suppliers.

Fig 4.5: Sharing of Procurement Info

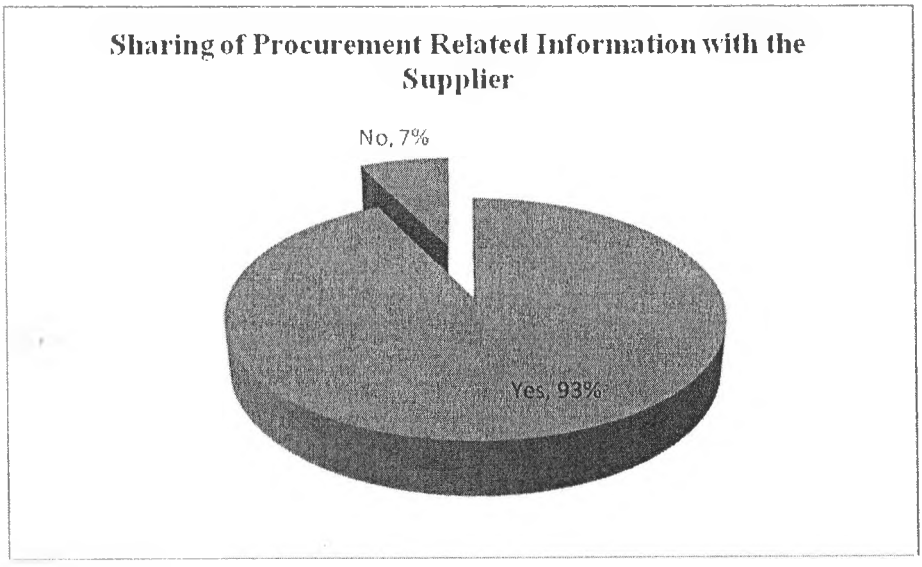


Figure 4.5, shows that over 92% of the mobile phone dealers share procurement related information with their key suppliers.

Table 4.3: Information Sharing With Key Suppliers

Construct	Freq. High Negative	Freq. Negative	Freq. Neutral	Freq. Positive	Freq. High Positive	Conclusion
Demand driven orders				1 4%	27 96%	Most make demand specific

					orders
Information to suppliers of demand changes			4 14%	24 86%	Most inform suppliers of demand changes
Supplier Info sharing			9 32%	19 68%	At least 67% agree
Timely data sharing			12 43%	16 57%	About 57% strongly agree
Accurate data shared		1 4%	13 46%	14 50%	Most (96%) agree
Actual sales data shared	2 7%	4 14%	10 36%	12 43%	About 21% do not
Getting timely data on new models			4 14%	24 86%	Over 85% agree

Table 4.3 shows that there is general information sharing between the dealers and their suppliers. Most of the dealers use demand-specific information to make their mobile phone orders and inform their suppliers if there is any change in the demand. All of the dealers share timely and accurate information with their suppliers for better

performance, with 50-68% saying that they do this regularly and completely. Only about 7% of the dealers do not avail actual usage data to their suppliers. Additionally, 85% of the dealers said that their suppliers give them timely information about new models in the market.

4.4.4. Supplier Sourcing and Selection

Fig 4.6: Supplier Involvement Strategy

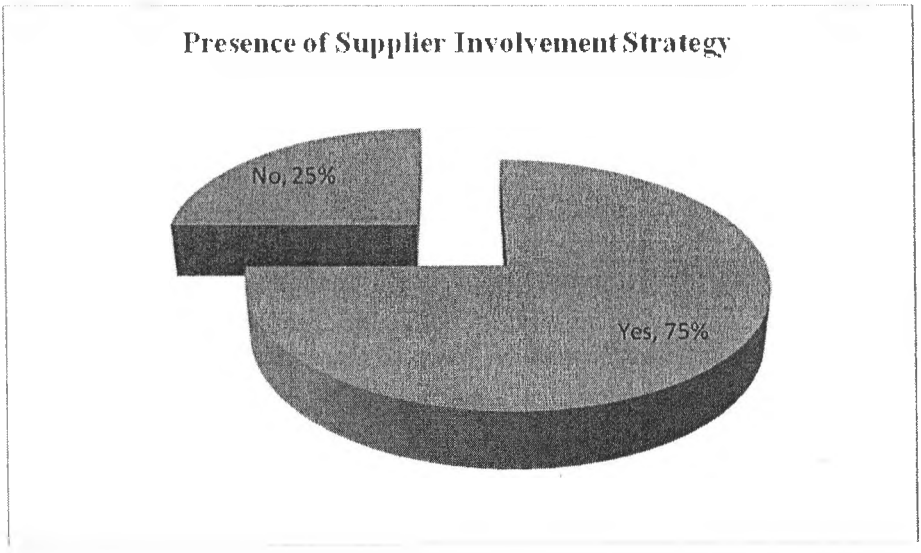


Figure 4.6, shows that about 68% of the mobile phone dealers have a strategy on involving their key suppliers.

Table 4.4: Supplier Sourcing and Selection

Construct	Freq. High Negative	Freq. Negative	Freq. Neutral	Freq. Positive	Freq. High Positive	Conclusion
Involvement of suppliers in marketing			2 7%	16 57%	10 36%	Majority (93%) agree
Supplier involvement in sales		1 4%	5 18%	14 50%	8 28%	About 4% do not
Supplier involvement in strategic planning process	4 14%	5 18%	8 29%	9 32%	2 7%	About 39% involve their suppliers
Continuous with suppliers			1 4%	19 67%	8 29%	At least 96% agree
Supplier speed and flexibility of delivery				1 4%	27 96%	Close to 100% of the firms agree
Low prices from suppliers				10 36%	18 64%	Over 60% strongly agree

Large base of suppliers	1 4%	3 11%	17 60%	7 25%	Over 85% agree
High mix of mobile phone handsets		2 7%	6 21%	20 71%	71% strongly agree

Table 4.4, illustrates that there are set strategies on supplier involvement by most of the mobile phone dealers. This is evidenced by the fact that over 96% of the mobile phone dealers have a continuous relationship with their suppliers and develop innovative sales strategies with them. Perhaps as a consequence of this of involvement, over 60% of the dealers strongly agree that their key suppliers offer low prices on the stock and 71% of the mobile phone dealers strongly agree that they have a large mix of phone handsets. Close to 100% of the firms agree that their supplier have speed and flexibility in their delivery of the requested stock.

4.4.5. Options for disposing obsolescent mobile phone handsets

Table 4.5: Options for Disposing Obsolescent Mobile Phone Handsets

Construct	Freq. High Negative	Freq. Negative	Freq. Neutral	Freq. Positive	Freq. High Positive	Conclusion
Obsolete stock is returned to suppliers	15 53%	3 11%	1 4%	4 14%	5 18%	Over 53% do not return obsolete stock
Sale of disassembled phone parts	11 39%	12 42%	3 11%	1 4%	1 4%	Less than 8% sell the parts
Sale of upgraded obsolete handsets	10 36%	8 28%	4 14%	5 18%	1 4%	Over 64% do not sell
Sale of obsolete stock to less competitive regions/countries	6 21%	10 36%	5 18%	4 14%	3 11%	Over 57% do not sell
Obsolete handsets	8 28%	12 43%	1 4%	4 14%	3 11%	Just over 25%

collection point					strongly agree
Collection of customer obsolete handsets	23 82%	3 10%	1 4%	1 4%	Over 92% do not

Table 4.5 shows that the mobile phone dealers have various challenges with obsolescence as they do not have strategies on how to deal with it. Between 50-60% of the dealers do not return the slow moving stock to the suppliers, sell the slow moving stock in other regions or countries or sell upgraded obsolete mobile phone handsets. In addition less than 8% of the phone dealers sell parts of the obsolete mobile phone handsets and just over 24% of them have a collection point where they take the obsolete phones. Also, over 92% of the dealers do not collect obsolete mobile handsets from their customers.

4.5. Qualitative Data Analysis

4.5.1. General Observations

Generally the study found that there are high incidences of obsolescence in mobile phone handsets businesses in Nairobi. Some of the handsets that are particularly prone to obsolescence include Nokia (models 5030, 1202, 3310, 6120 classic, 1600, 1100, 2720, 1100, 1200, 5000 and N series) and Motorola (models V3, W160, L6, L7, W156 and C330). Other slow moving mobile phones include Sony Ericsson - K series, China V100 and V6, Siemens A60, G-Tide, Alcatel, LG, Panasonic, Techno and certain models of Samsung. According to the mobile phone dealers, the reason

these hand sets are slow moving range from changing styles, mistrust of the functionalities of a given phone and (high)price.

4.5.2. Dealing with Obsolescence

Some of the t the traders have come up with ways to deal with dead stock. For instance the dealers offer slow moving phones as special offers to attract customers to buy them; this includes giving them as gifts with other purchases among other approaches. In other instances the dealers sell the slow moving phone handsets at extremely low prices.

For those dealers who have shops in more than one town, they take the slow moving handsets to other areas such as the rural areas where style and fashion is yet to change consumer behaviour. This also includes collaboration with other shop owners in different areas where the models can be sold. When all other options have been exhausted, the mobile phone dealers end up storing the dead stock in their shops and other storage spaces.

However, in extreme cases some of the mobile phone dealers have had to diversify into other products such as air time or other totally unrelated products and completely close the handset sales lines. Other mobile phone dealers have had to downsize or move to more inexpensive areas of the city so as to still enjoy profits. The more established shops that had 4 or 5 branches countrywide have closed down most of their branches to be left with 1 or 2 operating ones.

The mobile phone dealers who have managed to survive to date have had to develop survival strategies. Some of these include buying on order only, based on a customer's request; making orders directly from manufactures to whom slow moving

merchandise can be and is returned to; dealing with a niche market so as to deal with the needs and behaviours of that niche exclusively and; making small orders so as to have small inventories to reduce incidences of dead stock.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter presents a summary of the findings and conclusion of the study. The study sought to investigate the effect of short product life cycle to obsolescence costs for mobile phone dealers in Kenya.

5.2. Summary

The study established that most mobile phone dealers have a great challenge of dealing with obsolescence in the sale of phone handsets. Over time, the ones that have stayed in business have had to revise how they do business by, including, creating firmer relationships with their suppliers so as to make demand-specific orders and to have the option of returning dead stock. However, those that have not been ble to deal with this challenge have had to reduce prices of their merchandise, close down some of their branches, diversify into other products or change their location to more inexpensive areas so as to still realize a profit. Most sight fashion, low phone functionality and price as the main reasons of having slow moving mobile phone handsets. Models of Nokia and Motorola are the handsets with high incidences of obsolescence.

5.2.1. Objectives' Summary

5.2.1.1. Objective One: Determining the level of obsolescence for the mobile phone handset dealers in Kenya

The study established that most of the mobile phone dealers in Kenya experience high incidences of obsolescent inventory in their businesses. The researcher found out that over 85% of the mobile phone dealers have obsolete or slow moving mobile phones. . Most of the traders sighted some Nokia and Motorola models as being particularly slow moving stock. Other phones that have high level of obsolescence include Siemens, Panasonic, Alcatel and G-Tide.

5.2.1.2. Objective Two: Determining what inventory management methods are used by the mobile phone dealers

To ensure that they survive, the study found out that the mobile phone dealers have come up with various inventory management methods to deal with the challenge of obsolescence.

40-50% of the dealers return the slow moving stock to the suppliers. The same percentage sells the slow moving stock in other regions or countries or sells upgraded obsolete mobile phone handsets. Other mobile phone dealers, less than 8%, sell parts of the obsolete mobile phone handsets.

5.2.1.3. Objective Three: Determining various methods available for disposing obsolescent mobile phones

The study found out that various mobile phone dealers have come up with a number of ways to dispose obsolescent mobile phones. The study found out that just over

24% of the mobile phone dealers have a collection point where they take the obsolete phones. Also, about 8% of the dealers collect obsolete mobile handsets from their customers. Some of the mobile phone dealers intend to be recycling the obsolete stock as guided by the Nokia Recycling Program which will soon be in Kenya.

5.3. Conclusions

The study concludes that mobile phone dealers are well aware of the challenge of obsolescence that they face in their firms. Obsolescence occurs due to many reasons including lack of timely, accurate and actual information sharing with the suppliers. Thus the products on the shelves may not be demand specific. Dead stock is also as a result of fickle consumers who buy phones based on what they consider to be fashionable, functional and affordable. The mobile phone dealers, who are not able to have dynamic strategies of surviving this industry, have large inventories of dead stock, diversify in to other products or completely fold and change the nature of their businesses. This is mainly because many of these mobile phone dealers do not have concrete methods of avoiding and dealing with obsolescence.

5.4. Recommendations

The study makes the following recommendations based on the findings and conclusions;-

There is much to be done in terms of familiarizing the mobile phone dealers with the various approaches that could be used to avoid dead stock or to deal with it in a sustainably manner.

Supplier related strategies which include increased involvement of the suppliers in their planning and marketing should be emphasized as fundamental components of

avoiding obsolescence. Actual, timely and accurate sharing of information with the suppliers would ensure that the stock in the shop is right in amount and nature for the market in which the mobile phone dealer operates. In addition, this would provide an entry point to work with suppliers to whom dead stock can be returned to reduce losses to the phone dealers.

Proper market studies would also ensure that mobile phone dealers are able to thrive in the industry. This is because the mobile phone dealers would be in a position to gauge what their consumers consider to be hip, fashionable, affordable and functional as they make the orders from their suppliers. Additionally, mobile phone dealers should adopt strategies that ensure that orders are only made on the basis of customer requests, as the customers will order what they consider fashionable, functional and affordable, thereby avoiding incidences of having dead stock.

As dead stock may not be completely avoidable, the mobile phone dealers must develop and employ proper and sustainable strategies of dealing with obsolescence. These include such approaches as recycling and returning dead stock to the suppliers/manufacturers.

5.5. Suggestions for Further Studies

The researcher would suggest that further studies can be done to investigate easy and sustainable approaches that mobile phone dealers can employ to avoid and deal with obsolescent mobile phone handsets. This kind of a study would build on the existing body of knowledge and give greater insights on e-waste management, a great concern for the 21st century.

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APPENDICES

APPENDIX 1: COVER LETTER

Agnes Kuira

P. O. Box 8172 - 00200

Nairobi

Email: agneskuira@yahoo.com

Phone No. : 0735-999-007

Dear Respondent,

RE: REQUEST FOR RESEARCH DATA

I am a postgraduate student at University of Nairobi currently undertaking my research project master of business administration in operations management. I am kindly requesting you to fill in this questionnaire, with an assurance that all information collected will be treated confidentially. You have been chosen because; you are better placed to tell us what the effect of short product life cycles on supply chain management in your organization. The research is for academic purpose and the findings will not be published. However, as a participant, you are free to request a soft copy which can be sent to you via email.

Thank you for your time and effort.

Yours faithfully,

Agnes Kuira

APPENDIX 2: QUESTIONNAIRE

Instructions to respondents

Please tick or write where applicable

A. General Information

1. Name of the firm: ..... (Optional)

2. Position at the Company

( ) Director ( ) Sales person ( ) Buyer/Purchasing Manager ( ) Others

3 No. of years the dealer has been in operation

( ) 0-2 yrs ( ) 3-5 yrs ( ) 6-9 yrs ( ) 10 yrs and above

4 No. of towns the dealer covers

( ) 1 ( ) 2 ( ) 3 ( ) 4 and above

B. Information on level of Obsolescence

1. Did/Do you have obsolete or slow moving mobile phones at your firm?

( ) Yes ( ) No

If yes, please fill in the following details: (Monthly)

Make e.g. Nokia	Model e.g. 3310	Avg. Quantity	Avg. Stock Size

C. Inventory Management

C (i). Access to new mobile phones

In your opinion, please indicate your agreement on the following statements.

Construct	Strongly Disagree	Disagree	Neither agree Nor disagree	Agree	Strongly agree
i. Customers can find the phone they desire as and when they want					
ii. At any given month more than half of our inventory is sold to the customers					
iii. We have a lot of the phone's stock remaining					
iv. We buy our inventory from suppliers that have reusable products					
v. We buy our inventory from suppliers that have products that easily take back obsolete or slow moving stock					
vi. We buy our inventory from suppliers that have products that are easily upgraded					
vii. We have a model for disposing obsolete inventory					

C (ii). Information Sharing

Does your firm have an integrated system of sharing information with suppliers?

( ) Yes ( ) No

Does your firm share procurement related information with key suppliers?

( ) Yes ( ) No

In your opinion, please indicate your agreement on the following statements.

Construct	**Strongly Disagree**	**Disagree**	**Neither agree Nor disagree**	**Agree**	**Strongly agree**
i. We use actual demand by customers to order mobile phone handsets					
ii. We inform our suppliers of demand changes					
iii. We exchange information with our key suppliers which enable us to perform better					
iv. The information we provide our suppliers is always timely					
v. The information we provide to our suppliers is always accurate					
vi. We make actual usage/sales data available to our suppliers					
vii. We get timely information about new models of handsets from our suppliers					

C (iii). Supplier Sourcing and Selection

Does your firm have a strategy on involving key suppliers?

( ) Yes ( ) No

In your opinion, please indicate your agreement on the following statements.

Construct	Strongly Disagree	Disagree	Neither agree Nor disagree	Agree	Strongly agree
i. Key suppliers are involved in the marketing process of our products					
ii. We seek key suppliers to develop innovative strategies to support sales of any new product					
iii. Our key suppliers are involved in our strategic planning process					
iv. There is continuous relationship between our firm and our key suppliers					
v. Our key suppliers have speed and flexibility of delivery					
vi. Our Key suppliers always offer low prices					
vii. We have a large base of suppliers					
viii. We have a high mix of mobile phone handsets purchased at any given time					

D. Options for disposing Obsolescent mobile phone handsets

In your opinion, please indicate your agreement on the following statements.

Construct	Strongly Disagree	Disagree	Neither agree Nor disagree	Agree	Strongly agree
i. The obsolete/ slow moving stock is returned back to our suppliers					
ii. We make sales of the disassembled parts of obsolete mobile phone handsets					
iii. We make sales of upgraded obsolete mobile phone handsets					
iv. Slow moving/ Obsolete stock is sold to other less competitive region/ country					
v. We have a collection point/place where the obsolete mobile phone handsets are taken					
vi. We usually collect obsolete mobile phone handsets from our customers					

Please indicate any other method/s you use for disposing slow moving and/or obsolete mobile phone handsets in your shop:

i. _____

ii. _____

iii. _____

THANK YOU

APPENDIX 3: MOBILE PHONE DEALERS AND ACCESSORIES IN NAIROBI MAPPED FOR RESEARCH

Mobile Phone Handset Shop	Location	Contacts
1. Airtime Enterprising Ltd	University Way, City Centre, Nairobi	P. O. Box 61032 - Nairobi. Tel: +254-20-2240018
2. Aziz Communication Ltd	Uganda Hse5th, City Centre, Nairobi	P. O. Box 68975 - 00622 Juja Rd. Tel: +254-20-2249068
3. Base Two Technologies	Kenwood Hse 3rd Flr Kimathi St, City Centre, Nairobi	P. O. Box 53420 - 00200 City Square. Tel: +254-20-2229051
4. Bridges Mobile Connections	City Centre, Nairobi	P. O. Box 4164 - 00200 City Square. Tel: +254-20-344097 Mobile: +254-722259053
5. Bulsho Trading Co Ltd	Afya Centre Right Wing Rm 18th Tom Mboya St,	
6. Callconnect Ltd	River/Accra Rd, City Centre, Nairobi	P. O. Box 76460 - 00508 Yaya Towers. Tel: +254-20-2210913 Mobile: +254-720508444
7. Capital Realtime Ltd	Lonrho Hse Standard St, City Centre, Nairobi	P. O. Box 7422 - 00200 City Square. Tel: +254-20-2246646 Fax: +254-20-2247900
8. Cellular Communications Ltd	Hughes Bldg Grd Flr Shop 13 Kenyatta Ave,	P. O. Box 49670 - 00100 Nairobi GPO.

	City Centre, Nairobi	Mobile: +254-722757098
9. Cellular Express systems Ltd	20th Century Plaza4th Mama Ngina St, City Centre, Nairobi	P. O. Box 10732 - 00100 Nairobi GPO. Tel: +254-20-2309939 Mobile: +254-728404050
10. Cellular Support Systems Ltd	20th Century Plaza 4th Flr Mama Ngina St, City Centre, Nairobi	P. O. Box 10732 - 00100 Nairobi GPO. Tel: +254-20-316054
11. Cheche Telecommunications	Travel Hse Mama Ngina St, City Centre, Nairobi	P. O. Box 42498 - 00300 Ronald Ngala St. Tel: +254-20-2210182
12. Citicom Mobiles Ltd	City Centre, Nairobi	P. O. Box 10334 - 00100 Nairobi GPO. Tel: +254-20-313074
13. EdinCommunication Ltd	Cargen HseGr Moi Ave, City Centre, Nairobi	P. O. Box 4452 - 00200 City Square. Tel: +254-20-316374 Fax: +254-20-2213448 Mobile: +254-722249249
14. Equator Mobiles Ltd	Grand Regency Hotel Arc Uhuru Hwy, City Centre, Nairobi	P. O. Box 42812 - 00100 Nairobi GPO.
15. ET Coms (K) Ltd	KICC Gr Flr Shop No 8 Harambee Ave, City Centre, Nairobi	P. O. Box 393 - 00515 Buru Buru. Tel: +254-20-315125
16. Excel Mobile Accessories	Mago Hse Gr Flr, Off Munyu Rd, City Centre, Nairobi	P. O. Box 12631 - 00400 Tom Mboya St. Tel: +254-20-2219591
17. Focus Net Ltd	Solar Hse Gr Flr Moi	P. O. Box 496 - 00100

	Ave, City Centre, Nairobi	Nairobi GPO. Tel: +254-20-2220042
18. Fone Wireless Co Ltd	Accra Rd, City Centre, Nairobi	P. O. Box 16518 - 00100 Nairobi GPO. Tel: +254-20-2250053
19. Forward Mobiles Ltd	Town Hse2nd Kaunda St, City Centre, Nairobi	P. O. Box 62893 - 00200 City Square. Tel: +254-20-316286 Fax: +254-20-312713
20. G B Ltd	The Stanley Bldg Gr Flr, Standard St, City Centre, Nairobi	P. O. Box 68874 - 00610 Eastleigh. Tel: +254-20-310385 Fax: +254-20-310386
21. Galaxy Communications Ltd	City Centre, Nairobi	P. O. Box 22030 - 00400 Tom Mboya St. Tel: +254-20-2219404
22. Hotspot Communications	Interfina Hse, Tom Mboya/Ronald Ngala Opp Wimpy KTDA Plaza, City Centre, Nairobi	P. O. Box 12631 - 00400 Tom Mboya St.
23. Jamas Music Shop	Accra Rd, City Centre, Nairobi	P. O. Box 74538 - 00300 Ronald Ngala St. Tel: +254-20-2211736
24. Jamii Mobile Connections Ltd	City Centre, Nairobi	P. O. Box 71399 - 00622 Juja Rd. Tel: +254-20-2242753
25. Jays Call Mobile Co Ltd	Watersys Plaza2nd Biashara St, City Centre, Nairobi	P. O. Box 64339 - 00620 Mobil Plaza. Tel: +254-20-342793 Mobile: +254-728672888
26. Jj's Cell Phone Services	City Centre, Nairobi.	P. O. Box 62358 - 00200

		City Square.
27. Mafam Trading Co Ltd	Princely Hse2nd Moi Ave, City Centre, Nairobi	P. O. Box 55063 - 00200 City Square. Tel: +254-20-2215060 Fax: +254-20-2215060 Mobile: +254-720392355
28. Masalani Communication	IPS Bldg2nd Kimathi St, City Centre, Nairobi	P. O. Box 234 - 00610 Eastleigh. Tel: +254-20-2251587
29. Mergut Communications Point Ltd	Coronation HseGr Race Course Rd, City Centre, Nairobi	P. O. Box 6846 - 00300 Ronald Ngala St. Tel: +254-20-316871
30. Metro Links	City Centre, Nairobi	P. O. Box 1893 - 00200 City Square. Tel: +254-20-2214210
31. Metropolitan Communications Network Ltd	Vedic Arc Gr Flr, City Centre, Nairobi	P. O. Box 34074 - 00200 City Square. Tel: +254-20-2242381
32. Mobicom (K) Ltd	Reinsurance Plaza8th Aga Khan Wlk, City Centre, Nairobi	P. O. Box 10783 - 00100 Nairobi GPO. Tel: +254-20-310243 Fax: +254-20-311491 Mobile: +254-722689120
33. Mobicom Kenya Ltd		P. O. Box 10783 - 00100 Nairobi GPO. Tel: +254-60-21816
34. Mobile Phone Warehouse	Hughes Bldg Gr Flr, City Centre, Nairobi	P. O. Box 46371 - 00100 Nairobi GPO. Tel: +254-20-312711 Fax: +254-20-312702

35. Mobile World (K) Ltd	Uganda Hse 3rd Flr Kenyatta Ave, City Centre, Nairobi	P. O. Box 56009 - 00200 City Square. Tel: +254-20-2247925 Fax: +254-20-2252146
36. Mobiphones Experts	Central Bldg Moi Ave, City Centre, Nairobi	P. O. Box 26511 - 00100 Nairobi GPO. Tel: +254-20-2219110
37. Mobo Tel-Com	Uganda Hse 1st Flr, Kenyatta Ave, City Centre, Nairobi	P. O. Box 74067 - 00200 City Square. Tel: +254-20-2211855
38. Morgenstar Enterprises	Ushindi Explo Centre Ltd Wing A Gr Flr Muindi Mbingu St,	City Centre, Nairobi P. O. Box 22030 - 00400 Tom Mboya St
39. Musimba Investments	Jubilee Insurance Hse Gr Flr, Wabera St, City Centre, Nairobi	P. O. Box 50330 - 00200 City Square. Tel: +254-20-341194 Fax: +254-20-341194
40. Ogent Enterprises Communications	Embassy Hse Opp Sheria Hse, City Centre, Nairobi	P. O. Box 34650 - 00100 Nairobi GPO.
41. Omnifone (K) Ltd	Gujarat Hse Biashara/Muindi Mbingu St, City Centre, Nairobi	P. O. Box 73194 - 00200 City Square.
42. Optimum Connection	Union Tws1st Moi Ave, City Centre, Nairobi	P. O. Box 22707 - 00100 Nairobi GPO. Tel: +254-20-2214281 Mobile: +254-722947482
43. Patrick	Jubilee Insurance Hse Gr Flr, Wabera St, City Centre, Nairobi.	P. O. Box 50330 - 00200 City Square.
44. Phone Experts (K) Ltd	Next to Bay Forex Bureau, City Centre, Nairobi	Next to Bay Forex Bureau, City Centre, Nairobi

45. Phonz u Like Ltd	Transnational Plaza Mama Ngina St, City Centre, Nairobi	P. O. Box 39364 - 00623 Parklands. Tel: +254-20-310888
46. Pick A Phone	Corner Hse15th, City Centre, Nairobi	P. O. Box 1251 - 00100 Nairobi GPO
47. Rift Valley Communications Ltd	Posta Sacco Plaza5th, City Centre, Nairobi	P. O. Box 22907 - 00400 Tom Mboya St. Tel: +254-20-340319
48. Safetech Mobile Communications Ltd	City Centre, Nairobi P. O. Box 7119 - 00100 Nairobi	GPO. Tel: +254-20-2252319
49. Satellite Mobile Sales	City Hse Gr Flr, Standard St, City Centre, Nairobi	P. O. Box 69794 - 00400 Tom Mboya St. Tel: +254-20-341165
50. Sharp Oriesh Communication	Meru South3th Tom Mboya St, City Centre, Nairobi	P. O. Box 42482 - 00100 Nairobi GPO. Tel: +254-20-2217228 Mobile: +254-721702595
51. Simba Telecom Ltd	Prudential Assurance BldgGr Wabera St, City Centre, Nairobi	P. O. Box 79226 - 00200 City Square. Tel: +254-20-341741 Fax: +254-20-341741
52. Smart Phones Ltd	City Centre, Nairobi	P. O. Box 68762 - 00622 Juja Rd. Tel: +254-20-2245212
53. Star Mobile Ltd	City Centre, Nairobi	P. O. Box 3617 - 00100 Tel: +254-20-2228062
54. Superiorfone Comm Ltd	Imenti Hse Gr Flr, City Centre, Nairobi	P. O. Box 6622 - 00300 Ronald Ngala St. Tel: +254-20-2223840
55. Target Mobile Connection	Reboro HseGr Luthuli Ave, City Centre, Nairobi	P. O. Box 69961 - 00400 Tom Mboya St.

56. Tele Bell Ltd	Viewpark Tws2nd Loita St, City Centre, Nairobi	P. O. Box 48369 - 00100 Nairobi GPO. Tel: +254-20-2219349 Fax: +254-20-2214418
57. Ultimate Communications Ltd	City Centre, Nairobi	P. O. Box 72489 - 00200 City Square. Tel: +254-20-2211511
58. Vertex Communications	Taveta Crt BldgGr Taveta Rd, City Centre, Nairobi	P. O. Box 11854 - 00100 Nairobi GPO. Tel: +254-20-315820 Mobile: +254-722777762
59. Vilcostec Enterprises Ltd	Caxton Hse2nd Koinange St, City Centre, Nairobi	P. O. Box 8478 - 00100 Nairobi GPO. Tel: +254-20-2243666 Mobile: +254-720341120
60. Wataalamu Co Ltd	Thathini Hse Luthuli Ave, City Centre, Nairobi	P. O. Box 28835 - 00300 Ronald Ngala St. Tel: +254-20-2211076
61. Wheel Park Co Ltd	Agip Hse 4th Flr Haile *Selassie Ave, City* Centre, Nairobi	P. O. Box 7875 - 00100 *Nairobi GPO.* Tel: +254-20-2229839
62. Alkassam Electronics	Victoria Court, Ground Floor, Luthuli Avenue	Tel: 0721 916646
63. Jazz Telcom	Njengi Hse, 3rd Floor	Tel: 0752 992525
64. Joe tech Comm	Lakani Building, Ground Floor, Moi Avenue	Tel: 0722 371359
65. Digital Electronics	Old Nation House, Ground Floor	Tel: 0722 488994

66. Samchi Telcom	Barclays Plaza	P.O. Box 16982 – 00619, Tel: 0722 444444
67. Midcom	Utalii House	Tel: 0729 573610 Email: mmwalawa@yahoo.com
68. Mobile Friendly (MFL Ltd.)	Imenti House, Ground Floor	Tel: 0727 177752
69. Semanet Communication	Imenti House, Ground Floor	P.O. Box 11854, Tel: 0721 833588
70. Zetort Communication	Cargen House, Moi Avenue	
71. Dimples Mobile and Accessories	Ambassador Hotel, Ground Floor	Tel: 0725 879798