INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY TOOLS ON INVENTORY MANAGEMENT:
A CASE OF UCHUMI SUPERMARKETS LIMITED

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ABSTRACT

The objectives of SCM are to achieve the desired customer service level in the targeted market segment and to optimize the total cost of the supply chain investment. The general objective of the study was to investigate the influence of information and communication technology tools on inventory management: A case of Uchumi Supermarket Limited. The specific objectives of the study were to establish the influence of vendor managed inventory (VMI) and distribution resource planning (DRP) System on inventory management of Uchumi Supermarket Limited. The study adopted descriptive design. The target population comprised of 173 Uchumi senior personnel in the following departments; IT, Finance division, customer care, supply and administration department from the Company's Offices in Nairobi. Owing to the small number of target population, a census study was carried out which generated a total of 173 respondents. The researcher used questionnaires as data collection instruments for the research. The questionnaire was administered through drop and pick later method. The quantitative data obtained from the questionnaires was coded and keyed into statistical package of social science (SPSS) analysis software. The study concluded that ICT is useful in attaining efficiency in the inventory management of Uchumi Supermarkets. ICT applications such as VMI and DRP were found in the business because they are easily understood, easy to implement and cost- effective. Vendor managed inventory influenced the inventory management of Uchumi Supermarket. Distribution resource planning (DRP) system influenced the inventory management of Uchumi Supermarket. The Supermarket should focus on developing strong ICT systems, strong warehousing facilities and/or by engaging large suppliers to lease from third parties. This would hasten the implementation of VMI in the Supermarket. The Supermarket should enter into distribution resource planning agreements defining clearly the responsibilities and obligations of the parties involved.

Key Words: Vendor Managed Inventory, Distribution Resource Planning, Information and Communication Technology, Inventory Management, Uchumi Supermarkets Limited

Background of the study

This chapter gives a brief introduction of the research study by looking into the information and communication technology tools and their influence on inventory management in firms. The background of the study looks at the nature of companies in Kenya and their orientation to adopt various ICT tools and their effect on inventory management. The chapter also states the problem at hand, explores the objectives of the study while stating the research questions which this study hopes to have answers to. The chapter goes ahead to give the scope of the study, the significance of this study and finally the limitations of study. In the era of globalization and increasing business challenges, Supply Chain Management (SCM) has become a major focus point for many organizations. The concept of SCM has therefore gained much prominence in recent years as a way of gaining competitive advantage in the market (Kurien & Qureshi, 2011). On a basic level, the objectives of SCM are to achieve the desired customer service level in the targeted market segment and to optimize the total cost of the supply chain investment. In order to achieve the optimal level of service efficiency and ensure cost minimization in SCM, there is a need to eliminate unnecessary activities. Information and communication technology (ICT) offers the promise of fundamentally changing the lives of much of the world's population. According to Dobler and Starling (2006) inventory is the total amount of goods and/ or materials contained in a store or factory at any given time. The term inventory is used to indicate raw materials, work in progress (this is input that have entered the production process but not yet fully processed.) and the finished goods still held up in the industry not yet released in the market.

According to Thummalapalli (2010) inventory management is the means by which material of the correct quality and quantity is made available as when required with due regard to the economy in storage and ordering cost, purchasing, price and working capital. Inventory management is the function of planning, controlling, and maintaining the right quantity of materials using the minimum level of resources. Inventory management aims at efficient purchasing, storage and use of the materials. In business, the general definition of ICT is the application of technology to coordinate various players where knowledge is created and shared seamlessly, hence obviating or reducing transactional costs (Carugati & Rossignoli, 2011). Lindgren (2011) noted that utilisation of ICT technologies can help a firm to achieve competitive advantage due to high speed of development, ability to visualize business performance and reduction in cost of doing business. In its various forms, ICT affects many of the processes of business and government, how individuals live, work and interact, and the quality of the natural and built environment.

Tomar (2009) observed that information technology is the most effective tool in decision-making process in operations management. Organizations can use ICT solutions in the management of supplier networks, facilitating traceability and managing distributions networks. Nowadays, competition is no longer company to company but supply chain to supply chain (Christopher, 2011). In supply chain, an uncertainty in supply is a major reason for most organizations within the supply chain keeping inventories. Inventory management is necessary at different locations within an organization or within multiple locations of a supply chain, to protect (the production) from running out of materials or goods.

Inventory management can be defined as the "management of materials in motion and at rest" (Coyle, 2003). The following activities fall within the

range of inventory management control of lead times, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods and demand forecasting (Reid & Sanders, 2007).

Information communications technology (ICT) function is responsible for designing, implementing and maintaining many of controls over and organization's business processes. IT has a critical role in collecting, processing, and storing data that is summarized and reported in financial statements (Cannon & Crowe, 2004). Use of telecommunication technologies enable suppliers, customers, manufacturers, retailers, employees and managers in the supply chain to communicate effectively enhancing reduction of lead time and paperwork and at the same time improve customer-supplier relationships. Business organizations are looking forward to reduce their costs and lead time in order to improve service level (Humphrey, 2001). To achieve the above and create value in the supply chain, communication tools like internet and web sites are used (Tim, 2007). For companies to perform well in terms of cost management and offer high customer service in supply chain management, they need to incorporate top line information technologies. According to Li (2001) companies that do not use information and communication systems face challenges in handling costs, offer superior customer service and lead in inventory management. Li (2001) further identified information technology tools like electronic data interchange, enterprise resource planning, internet and extranet among many tools. ICT and inventory management have drawn a lot of attention in the global scene. According to Lancioni (2003), an American distributor (Do It Best) reported a saving of US $ 4.5 million after instituting order processing and

purchasing system using ICT. Equally according to NAPA auto parts (a US leading auto parts supplier), after adopting internet ordering processing, captured a big share of the market. Manufacturers embrace the benefits brought by ICT thus there is great improvement in supply chain agility, higher efficiency and timely product delivery to customers (Fasanghari, 2008).

According to Sweeney (2005), inventory management is a key competitive advantage tool and outlines the role of information and communication technology as an enabler in the value chain process. Ashok (2013) carried out a study on relationship between inventory management and profitability: An Empirical Analysis of Indian Cement Companies. The dependent variable, gross operating profit is used as a measure of profitability and the relation between inventory management and profitability is investigated for a sample of five top Indian cement companies over a period of ten years from 2001-2010. This study employed Regression analysis to determine the impact of inventory conversion period over gross operating profit taking current ratio, size of the firm, financial debt ratio as control variables.

Ashok (2013) found that there is a significant negative linear relationship between inventory conversion period and profitability. The study found that Inventory conversion period has an inverse relationship with firms' profitability i.e. when the ICP days increase the profitability of firm decreases and vice versa. It was found that, the firms profitability as measured by GOP has a negative relationship with financial debt ratio. This implied that profitability increases with decrease in financial debt ratio. Furthermore in this study the relationship between the firm size and GOP was positive which indicates that profitability increases with an increase in firm size. The relationship between current ratio and the GOP was negative.

Regionally, several studies have also been conducted with regard to ICT and inventory management in firms. A study done by Gono, Harindranath and Ozcan (20015) on Challenges of ICT adoption by South African SME's where quantitative and qualitative research techniques were used on 130 firms surveyed, findings show that supply chain drives growth by using ICT. Bob Morgan Enterprises in South Africa uses ICT is playing a big role in even small and medium enterprises in Johannesburg (Modimogale & Kroeze, 2011).

Mazanai (2012) studied the Impact of just-in-time (JIT) inventory system on efficiency, quality and flexibility among manufacturing sector, small and medium enterprise (SMEs) in South Africa. Self administered questionnaires were distributed to a sample of manufacturing sector SMEs in the food, wood and telecommunication, metals, non-metals and other industries. The study revealed that the majority of SMEs in the manufacturing sector were not applying the JIT inventory management principles. It was furthermore revealed that there are challenges impeding the implementation of JIT principles in the manufacturing sector SMEs. These challenges include lack of reliable supplier networks, lack of capital and lack of knowledge of immediate financial gains among others.

The Kenyan Context
Momanyi and Sanewu, (2014) carried out an investigation into the impact of information communication technology on inventory control systems in transport organization: A Case study of Kenya Ferry Services. The study adopted a descriptive research with survey of a total of 220and applied a stratified random sampling technique to select a sample size of 60respondents. Questionnaires were used as the main data collection Descriptive statistics analysis method was to analyze the gathered data. The study concluded that technology has had bigger impact on inventory

control in terms of efficiency, ease of accessing information and accuracy thereby affecting organizational performance.

Oballah, Waiganjo and Wachiuri (2015) effect of inventory management practices on Organizational performance in public health institutions in Kenya: A Case of Kenyatta National Hospital. The study found that inventory investment and inventory records accuracy have a positive influence on organizational performance while inventory shrinkage have a negative effect on organizational performance of Kenyatta National hospital thus this study recommends that the hospital should ensure that losses resulting to inventory shrinkage related to medicines are reduced.

According to Oballah *et al.*, (2015), this can be done by ensuring that inventory records are accurately kept. The hospital need to manage its inventory investment by ensuring that the right amount of stock is kept at all times. They noted that not having enough stock at any stage of the production process may lead to loss of business but also tying up too much cash in inventory can hurt the cash flow and lower storage costs, so by managing inventory firm funds are properly used.

Uchumi Supermarket Limited
Uchumi Supermarkets Limited is a Kenya-based company engaged in the retail supermarkets operation. It distributes bakery, wines, meat, fish, vegetables, as well as kitchen appliances and decoration, among others. The Company operates a network of 37 branches across East Africa. On 17th December 1976, Uchumi shareholders-Industrial Commercial & Development Corporation (ICDC), Kenya Wine Agencies Limited (KWAL) and Kenya National Trading Corporation (KNTC) - all Government owned parastatals entered into a management contract with Standa SPA of Italy. Standa, a leading supermarket group with a presence

in Europe and vast retail experience was given the task to manage and train Kenyan personnel who would eventually take over the running of the organization.

In the 1990's Uchumi spearheaded the hypermarket concept in Kenya. In early 2000s Uchumi started to experience financial and operational difficulties occasioned by a sub-optimal expansion strategy coupled with weak internal control systems.. As a result, on 31st May 2006, the Board of Directors resolved that the Company ceases operations and on 2nd June 2006, the Debenture Holders placed the Company under receivership. Simultaneously, the Capital Markets Authority (CMA) suspended the Company's listing on the Nairobi Securities Exchange (NSE). Following a framework agreement between the Government of Kenya, suppliers and debenture holders, the company is revived and commenced operations from 15th July, 2006 under Specialized Receiver Manager (SRM) and interim management.

The management and staff have since worked tirelessly to redeem the Company. From a negative bottom line in 2006, the company has reported profits in the last three financial years. The lending banks in turn lifted the company's receivership in 2010 and the company was successfully re-listed in the Nairobi Securities Exchange on 31st May 2011 – exactly five years to the date that it was suspended. The company is indebted in gratitude to the government, lending banks, our suppliers, customers and shareholders for their support and commitment to saving one of Kenya's oldest strongest brands.

According to Balancing Act (2013), Uchumi installed an Enterprise Resource Planning system that took a period of 18 months and a cost of over USD 1.2 million for license and an additional USD 2 million for implementation and an annual maintenance cost of USD 150,000. Other applications such Managed Inventory (VMI) technology, electronic point of sale (EPOS) and supply management systems have also been installed to achieve the stated goal of operational efficiency.

Statement of the Problem

In the dynamically competitive environment, many logistics companies have adopted ICT in emerging supply chain trends in improving inventory management. Effective integration of ICT with inventory functions plays a major influence in supporting inventory management in organizations (Nelson, 2009). The use of ICT to automate an organization inventory processes optimize efficiencies and improve access to information across every aspect of an organization. According to Govindaraian (2007), many organizations fear embracing ICT due to heavy financial implications involved. While every organization is undoubtedly unique each with its own set of purchasing, inventory, and order fulfillment, tracking systems and pick-and-pack procedures, the importance ICT plays in streamlining the inventory function within each organization cannot be underestimated. In 2013, Uchumi Supermarket Limited embraced the use of ICT in inventory management. In spite of the costly installation of ICT systems like ERP in 2013, post-receivership period inventory decreased by 3% in 2012/13 despite the 21% growth in business compared to 2011/12. According to Uchumi (2014), the Company lost revenue worth Ksh.250 million due to stock outs in its various outlets and incurred Ksh1.9 billion in warehouse charges; this was as a result of various factors at play including investment in more stock that led to tying up the much limited and scarce working capital. This was caused by low level of ICT in the inventory management function leading to erratic deliveries in the Supermarkets, late deliveries and inflexibility in the inventory function hence affecting customer satisfaction. The unavailability of efficient ICT in the inventory management has affected performance at Uchumi Supermarket hence reduced profits in

the downstream chain hence leading to loss of chain profits. Studies in inventory management have extensively been carried out in Kenya, such as Waweru (2010) carried out a study on the effects of inventory levels and stock outs at Kenya Forestry Research while Kimutai (2010) carried out a study on factors affecting inventory management in Kenya's public sector. According to the studies, organizations today continue to face business related problems like collection of timely reliable and accurate information, processing, storing, and retrieval for decision making and control of the organization. The application of information technologies to inventory management would change the way work is performed, the number and skills of contracting personnel, and the procurement organization's structure. Based on the foregoing, therefore this study sought to investigate the influence of ICT tools on inventory management in companies in Kenya where the context of focus was Uchumi Supermarket Limited.

Objectives of the Study

The general objective of the study was to investigate the influence of information and communication technology tools on inventory management: A case of Uchumi Supermarket Limited. The spe specific objectives of the study were:

- To establish the influence of vendor managed inventory on inventory management of Uchumi Supermarket Limited
- To assess the effects of distribution resource planning system on inventory management of Uchumi Supermarket Limited

LITERATURE REVIEW

This chapter gives an extensive review on available, related literature of the theoretical and empirical literature to the problem being investigated.

Theoretical Review

A theory includes a set of basic assumption and axioms as the foundation and the body of the theory is composed of logically interrelated, empirically, verifiable prepositions (Camp, 2001). Different theories have been employed to help bring clarity to the study of the influence of information and communication technology on inventory management. This study will be based on the following theories: Theory of constraints, Adaptive structural theory, dynamic capabilities theory, scientific management approach and concepts of inventory management, information systems and technology.

Theory of Constraints

Goldratt (1984) came up with the theory of constraints which states that an organization is a system and every system has at least one constraint limiting it from attaining its goal. According to Goldratt, these constraints must be identified and corrective measures must be taken for improved performance. A system can be evaluated through inventory, throughput and operating expenses. Throughput is the rate at which a firm generates revenue through sales, inventory is all the investments of a firm in terms of purchased stocks (raw materials and assemblies) and operating expenses refers to all money spent to change inventory into throughput. The theorist defines a constraint as any barrier to a firm's achieving its goals. Goldratt (1984) identified internal constraint which exists when a system cannot produce enough for the market and external constraint which exists when a system produces more than the market needs. In order to improve the organizational output, throughput must be increased while inventory and operating expenses must be reduced. This study is concern with inventory as a constraint where parameters must be put in place to ensure optimal quantities' are held leading to efficiency. In inventory management, there are constraints like

uncertain demand, long lead times and high production costs (Gunus and Guneri, 2007). In this research is the belief that inventory management faces challenges like high inventory costs, untrained personnel, inaccurate data and demand variability. This theory is therefore is linked o vendor managed inventory system in that the achievement of delivery on time is a standard procurement objective. If goods and material arrive late or work is not completed at the right time, sales may be lost, production halted, and damages may be invoked by dissatisfied customers.
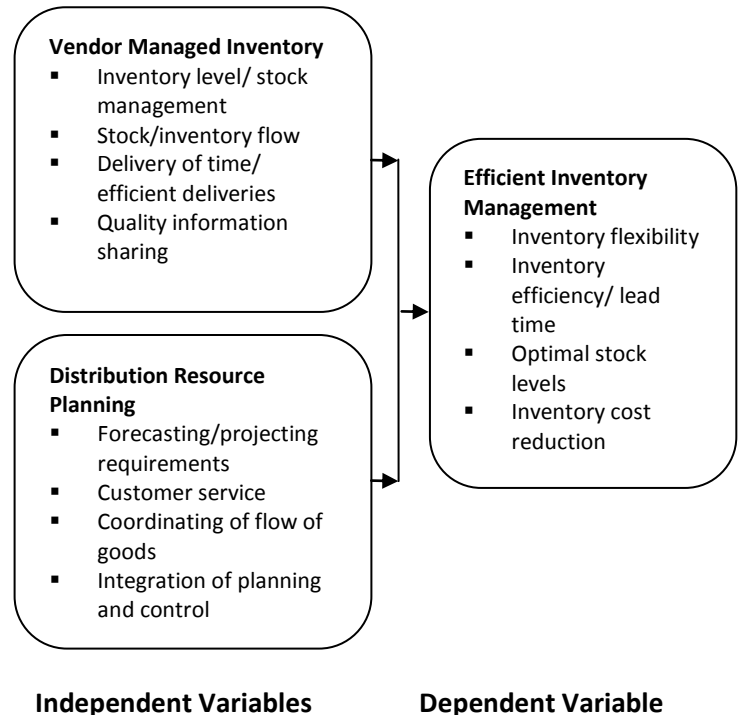
Adaptive Structural theory

The proponent of this theory was Anthony Giddens in 1984 where he tried to reconcile social systems and micro perspective of organization structures. Desanctis and Poole (1994) made use of it to propose Adaptive Structuration Theory (AST).This Theory show the interaction between advancing information technology, social structures and human interaction is explained. This theory goes further to describe the interaction between rules and resources provided by information technology as a base for human activities.

AST is a workable approach in studying the effects of applying IT in inventory management as it examine the change from distinct perspectives. According to Ramakrishna (2005), adaptive structuration theory provides specific advances in information technologies that enable organizations to cope with changes in business alignment leading to effective management of resources. This study will use AST theory to investigate how the complexity inventory management is influenced by information and communication technology (Ramakrishna, 2005).

This theory could help in evaluating the use and penetration of advancement in ICT technologies in manufacturing entities. The theory posits that

lowering inventory level would give organization a competitive advantage due to production of quality products at lowering prices and it will respond faster to customer needs. Through Distribution resource planning system accurate demand and sales forecasts would help a firm out of stock-out situations and allow a business firm provide high level of customer service.

Vendor Managed Inventory
- Inventory level/ stock management
- Stock/inventory flow
- Delivery of time/ efficient deliveries
- Quality information sharing

Distribution Resource Planning
- Forecasting/projecting requirements
- Customer service
- Coordinating of flow of goods
- Integration of planning and control

Efficient Inventory Management
- Inventory flexibility
- Inventory efficiency/ lead time
- Optimal stock levels
- Inventory cost reduction

Independent Variables   **Dependent Variable**

Figure 1: Conceptual Framework

ICT and Inventory Management

Inventory management procedure streamlines the number of levels in a system can help shorten the distance/gap between the source and the end user and thus improve efficiencies by controlling stock levels and stock redundancies. Information and communication technologies (ICT) are one of the most important enablers of effective supply chain management Jack et al (2006). A great deal of interest in supply chain management stems from the availability of information and the methods to

analyze this information to reach meaningful results. As electronic business gain importance, new opportunities exist, and the wide spread use of internet is increasing the interest for the information technologies (Haag & Stephen, 2010).

ICT tools are a source of competitive power for many companies. Especially for service industries such as big retailers, transportation companies such as DHL and airline companies where they are now using information technologies them widely as a result, information technologies have earned a vital role in many organizations (Lysons & Farrington, 2006). In supply chain management, time and opportunities to get information on time is very important. Accurate and timely information will enable the organization to increase service level and as a result decrease the costs and lead times (Bottani (2008). In forecasting, one has to determine what has to be forecast that is the items quantity levels and the period in question followed by data availability and forecast model to be used. Examples of forecast models include Delphi method, market research and executive opinion (Ried 2007). According to Lysons (2006) inventories pervade the business world and maintaining inventories is essential for any company that deals with physical products, including retailers, wholesalers and the manufacturers. The total value of all inventory—including finished goods, partially finished goods, and raw materials—in the United States is more than a trillion dollars which is more than $4,000 each for every man, woman, and child in that country. The carrying costs of the inventory are also very huge, perhaps a quarter of the value of the inventory. Therefore, the costs incurred for the storage of inventory in the United States may run into hundreds of billions of dollars annually. In today's business environment, many smaller businesses have come to rely on computerized inventory management systems. Given such developments, it is little wonder that business experts commonly cite inventory management as a vital element that can spell the difference between success and failure in today's keenly competitive business world. Good inventory management is responsible for the availability of goods and this enhances smooth operations as materials required are present at the right quantities, quality and at the right time in order to deliver a specific level of service. According to Goor and Weijera (1998) all inventories are responsible for about one third of the working capital. Inventory costs also represent a significant component of total logistics costs (Coyle 2003). The above costs can be minimized by using information and communication technologies such as Enterprise Resource Planning (ERP). Working capital invested in stocks/inventory could be a very useful resource when it could be used otherwise (Fawcett 2007). Happenings like inventories catching fires, being stolen or damaged pose a great risk thus influencing production processes stoppage and order delivery delays Visser and Goor 2004). Inventory costs are some of the easiest to identify and reduce when handling supply chain challenges (Johnson & Pyke, 2001).

Vendor Managed Inventory (VMI)
Vendor Managed Inventory (VMI) is where the manufacturer is given responsibility for manufacturing and controlling inventory level at the retailer's distribution centre and in some instances at the retail store level as well (Baily *et. al.*, 2008). VMI is a process that falls under the 'push' stock management processes Irungu & Wanjau (2011). These are processes that can be triggered by a firm's interpretation of an expected demand in inventory and supply is scheduled to meet this demand. A well designed and developed approach to VMI can lead not only to reductions in inventory levels in the supply chain, but also to secondary savings arising from simplification of systems and procedures (Rushton, Croucher, & Baker, 2011). This is because there is potential for great

improvement of operational performance of firms. This is due to elimination of delays in both information and material flow for the firms. The achievement of delivery on time is a standard procurement objective. If goods and material arrive late or work is not completed at the right time, sales may be lost, production halted, and damages may be invoked by dissatisfied customers. Failure to achieve supply on time may slow down the cash to cash cycle, thus reducing the organization's efficiency or profitability (Baily *et. al.*, 2008). VMI provides the opportunity to develop a much close relationship and binding relationship among the retailers and the manufacturers as well as giving a much better visibility of the real demand. The supplier takes the responsibility for operational management of the inventory within a mutually agreed framework of performance targets which are constantly monitored and updated to create an environment of continuous improvement (Baily *et. al.*, 2008). Users receive improved service levels, and cash flows, and vendors enjoy better visibility of changing demand and greater customer loyalty (Emmett & Granville, 2007). Reduced administrative costs due to elimination of the need to monitor levels, paper to computer entries and reduced re-ordering costs (Farrington & Lysons, 2006). This can lead to significant reductions in inventory holding right through the supply chain (Rushton, Croucher, & Baker, 2011). The vendor is able to schedule deliveries efficiently, as it has better visibility of the client's requirements and it can incorporate these requirements at an early stage its product schedules (Rushton, Croucher, & Baker, 2011). VMI is likely to smooth demand. Companies that can react promptly and accurately to the needs of their customers are more likely to attract orders than those that cannot. If a company is seeking competitive advantage of becoming better able to respond to customer needs as they arise, then it follows that the company will require a greater degree of responsiveness from its own suppliers

(Baily, Farmer, Barry, Jessop, & David, 2008). VMI information improves forecasts of customers' requirement, thereby enabling firms to plan production to meet customer demand (Farrington & Lysons, 2006) . It enhances operational flexibility. It enables production times and quantities to be adjusted to suit the suppliers (Farrington & Lysons, 2006). While VMI has been voted best by the retail managers, it has its shortcomings associated with trust, turnover of suppliers and small scale suppliers who lack financial capacity to implement VMI system sustainably (Irungu & Wanjau, 2011). They further argue that sometimes this interferes with customer satisfaction as some goods on VMI become one-offs due to the high turnover of suppliers because some new suppliers are yet to develop credibility in their respective area of supply. The VMI effectiveness as a system is affected by inventory flow, the quality of ICT and quality of information and sharing but is not affected by the quality of relationship. Most of the empirical studies addressing the issue of VMI have focused on manufacturing firms and retailers (Vigtil, 2007; Kauremaa, Smares, & Holmstrom, 2009). Irungu & Wanjau, (2011), argued that vendor managed inventories systems could be used to gain competitive advantage by leveraging on inventory supplier reliability and strong buyer/supplier relationships to grow revenue and reduce risk. Their findings suggest that vendor managed inventory has been effective in retail supermarkets by improving stock management, cash flow and risk management. Irungu & Wanjau, (2011), stressed that vendor managed inventory system has a goal of accomplishing deeper integration and collaboration between the members of the supply in order to cope with the ever decreasing time windows for product and service fulfillment and the requirement for operational improvement of operational efficiency. Classen, Weele, & Raaij, (2008), testify empirically that implementation of the Vendor-Managed Inventory system leads to

improved service levels rather than cost reductions. Vendors and clients have linked computer systems often using Electronic Data interchange (EDI). This allows the vendors to monitor levels of inventory. Further the Vendor-Managed inventory initiative has, Stevenson (2006) observed, that stocking level variability is caused by factors such as deficient information sharing and deficient forecasts. He found out that variability of inventory majorly results due to firms not applying the inventory control systems. He enumerated the effects of inventory variability as inaccurate forecasting leading to periods of not having enough capacity leading to inadequate customer service and high inventory costs. Inventory control systems would enhance procurement efficiency and effectiveness of purchasing function and hence improve performance of the firm (industry-trade, 2008). Inventory control systems give feasibility in operation functions. Fawcett, Ogden, Magnan, & Cooper, (2006) appreciate the fact that companies have struggled to invest in technology of inventory control systems and organizational structures needed to achieve data and systems synchronization that enable coordinated inventory flows. This enhances timely inventory replenishment hence ensuring availability of supply as demand arises. According to Baily, Farmer, Barry, Jessop, & David, (2008) it is vital to get the balance of cost and service right. They argue that specific inventory targets are agreed and it is the responsibility of the manufacturer to ensure that suitable inventory is always available. They continue arguing that such depend on timely information and suitable computerized inventory control systems which have become available in recent years. However they fail to clarify whether the situation has improved than before or not. Therefore the current study intends to clarify the same.

Distribution Resource Planning (DRP) System

Distribution Resource Planning is a system for forecasting or projecting requirements for finished products at the point of demand (Farrington & Lysons, 2006). DRP systems are designed to take forecast demand and reflect this through the distribution system on a time-phased requirement basis (Baily, Farmer, Barry, Jessop, & David, 2008). From these projections, aggregated, time-phased requirements schedules for each echelon in the distribution system can be derived (Rushton, Croucher, & Baker, 2011). Distribution resource planning system acts by pulling the product through the distribution system once demand has been identified. According to Rushton, Phil, & Baker, (2011) the system works to the elimination of inventory. The distribution resource planning system tries to combine the need for lower inventory investment with improved customer service. According to Hansen & Mowen (2007) lowering inventory level would give organization a competitive advantage due to production of quality products at lowering prices and it will respond faster to customer needs. Businesses seek ways to reduce the time to bring products and services to market place to gain competitive edge (Hanke & Wichern, 2009). It enables physical resources requirements to be planned together with production and purchasing control. It controls the entire logistics system (Baily, Farmer, Barry, Jessop, & David, 2008). Inventory control systems have effect of smoothing the operations of the firm hence reducing lead time (Cousens, Szweszewski, & Sweeney, 2009). According to (Langfield-smith et al, 2009) time delays in production affect operational performance negatively. They assert that cycle-time management can be used as competitive advantage. However Cousens, Szweszewski, & Sweeney (2009) are of contrary opinion that reduction of lead time can only be beneficial if does not affect negatively operations of the firm. The control system may have an implication on

predictability of future demands and speed of the firm's production scheduling to meet customer demand. DRP serves a central role in coordinating the flow of goods inside the factory with the system modules that place the goods in the hands of the customer (Farrington & Lysons, 2006). Predictability of future demands, resource requirements and consumer needs may contribute to flexible operational performance. Bowersox, Closs, & Cooper (2007), state that competency of a firm can be measured by how well it is able to adapt to unpredictable situations. Accurate forecasting may have an effect on a firm's inventory level. Chang & Lin (2010) state that bullwhip effect is an example of predictive inaccuracy. Hanke & Wichern (2009), add that capacity of operational activities of the firm will be such that its output just matches demand. They say that excess capacity is wasteful and costly; too little capacity means dissatisfied customers and lost revenue. They argue that having the right capacity requires having accurate forecasts of the demand and the ability to translate forecasts into capacity requirements. DRP system take forecast demand and reflect this through the distribution system on a time-phased requirements basis (Rushton, Croucher, & Baker, 2011). According to Quesada, Gazo, & Sanchez, (2012) accurate demand and sales forecasts help a firm out of stock-out situations and allow business firms provide high level of customer service. The control system is fronted as to facilitate accurate prediction of customer demand and hence timely response to their requirements. DRP provides the basis for integrating the manufacturing planning and control system from the firm to the field (Farrington & Lysons, 2006).

Empirical Review

An important factor in inventory management relates to production scheduling. Continuous process manufacturers often produce a mix of products, one at a time, using the same equipment and facilities. Each time a different product is to be produced, it is necessary to stop the production process and make adjustments before proceeding (Ritzman et.al, 2003). The costs of shutdown and adjustments, which are referred to here as changeover costs, can be rather high. Production time is lost while the facilities are closed down, and labor costs must be expended to make the necessary adjustments (Ritzman et.al, 2003). As a consequence of the changeover costs, businesses try to find ways to minimize the number of changeovers. One of the principle ways of achieving this goal is through the use of inventory. Simply put, a company can choose to make many short production runs on each product in the mix, thereby incurring many changeovers and having smaller lots in inventory or it can opt for long production runs and very few changeovers and increasing inventory lots. In 1880 there was a change in manufacturing practice from companies with relatively homogeneous lines of products to horizontally integrated companies with unprecedented diversity in processes and products. Those companies (especially in metalworking) attempted to achieve success through economies of scale- the gains of jointly producing two or more products in one facility. The managers now needed information on the effect of product-mix decisions on overall profits and therefore needed accurate product-cost information. A variety of attempts to achieve this were unsuccessful due to the huge overhead of the information processing of the time (Wagner, 2002). However, the rapidly increasing need for financial reporting after 1900 created unavoidable pressure for financial accounting of stock and the management need to cost manage products became overshadowed. In particular, it was the need for audited accounts that sealed the fate of managerial cost accounting. The dominance of financial reporting accounting over management accounting remains to this day with few exceptions, and the financial reporting definitions of 'cost' have

distorted effective management 'cost' accounting since that time. This is particularly true of inventory (Saxena, 2009). Inventory management entails holding an appropriate amount of inventory. Too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage and loss. On the other hand, too little inventory often disrupts business operations, and increases the likelihood of poor customer service (Dimitrios, 2008). Inventory as an asset on the balance sheet of companies has taken on increased importance because many companies are applying the strategy of reducing their investment in fixed assets, like plants, warehouses, equipment and machinery, and so on, which even highlights the significance of reducing inventory (Coyle et al., 2003). Changes in inventory levels affect return on assets (ROA), which is an important financial parameter from an internal and external perspective. Reducing inventory usually improves ROA, and vice versa if inventory goes up without offsetting increases in revenue (Coyle et, al., 2003). Lean production/manufacturing is also an important consideration in improving the performance of the procurement function. Sanches and Ferez (2001) also investigated the link between lean production practices in manufacturing organizations and resultant enhanced competitiveness. Lean production is also expected to improve the performance of the firms through good housekeeping practices, such as general waste reduction and minimizing hazardous wastes. King and Lenox (2001) conclude that lean production is complementary to improvements in the performance of the procurement function and it often lowers the marginal cost of pollution reduction thus enhancing competitiveness. A study carried by Atieno (2014) on ICT and supply chain performance on logistic firms in Kenya where a population of 30 logistics firms in Nairobi was considered. The findings from this study indicate that ICT is used in information sharing which

supports planning of operations, distribution and material requirements. The study indicates that intermodal logistics can be enhanced by connecting stakeholders with an information and communication system which will minimize costs. The study found out that there is positive relationship between information and communication technology and supply chain performance of logistics firms. The study concludes that there is need to combine ICT and other organizational resources like work place practices organizational structures and financial condition of a firm. As ICT technology alone cannot deliver in value creation. Research has shown that many companies begin to use Internet to manage their inventory (Lancioni, 2000). Due to Internet-enabled inventory management system can provide real time stock information at all levels in the supply chain from customer stocks, field inventories and plant inventory, Internet deployment of inventory management rose from 30.1% in 1999 to 48.5% in 2001 .Philips Semiconductors, a leading international semiconductor supplier, managed their inventory by using Internet to simplify inventory tracking, reduce cost associated with manual labor and increase supply chain accuracy (Philips, 2006). Rapid advances in computer and software technologies combined with the explosive growth of the internet have led many companies to rethink their business practices, to put a greater emphasis on their use of IT, and to invest more in enterprise organization.

RESEARCH METHODOLOGY

This chapter described the methods used to gather information on the area of the study. A descriptive research design was used in this study. This design was appropriate for this research because it is concerned with clearly defined problems with definite objectives. The study adopted descriptive design which aimed at describing the impact of ICT tools on inventory management. This study

comprised of Uchumi senior personnel in the following departments; IT, Finance division, customer care, supply and administration department. The study targeted personnel in those departments as they were better placed to answer questions relating to inventory control and the company's competitiveness. The target respondents included the 173 management staffs from the Company's Offices in Nairobi. For purpose of this study the target population was stratified through top level, middle level and low level management. The researcher accessed the entire population and hence there was no sampling technique used. The researcher used census method owing to the small number of the target population. A sample size of 173 top, middle and low level management staffs of Uchumi Supermarkets in Nairobi was used. The main purpose of the questionnaire was to communicate to the respondents what was intended and to elicit desired responses in order to achieve the research objectives. The data collected for the research was primary data. Data collection was via a questionnaire as this was an efficient and convenient way of gathering the data within the resources and time constraints. The structure of the questionnaire included structured and semi-structured questions as this provided the flexibility for specific and unique responses to some of the questions. The questions included both closed and open-ended questions with subheadings where necessary to guide the respondents respectively. Pilot testing was done and involved checking whether the questions were clear and revoking any positive or negative response. It also helped to find out whether the questions were measuring what was expected. Content validity was employed in this study. To establish the validity of the research instrument the researcher sought opinions of scholars and experts including the supervisor. Reliability was confirmed by pre-testing the questionnaire with a selected sample from one of the projects. Before processing the responses, the completed questionnaires were edited for completeness and consistency. The raw primary data collected was coded prior to being input into SPSS statistical analysis software.

DATA ANALYSIS AND INTERPRETATION

This chapter presents research findings and discussion of the findings on influence of information and communication technology tools on inventory management of Uchumi Supermarket Limited. To enhance quality of data obtained, structured and unstructured types of questions were included. The data obtained was fed into SPSS version 22.0 and the output was used to compute the ratios needed to investigate the influence of information and communication technology tools on inventory management of Uchumi Supermarket Limited. Both descriptive and inferential analyses were conducted. The study targeted the top level, middle level and low level management staff in IT, Finance division, customer care, supply and administration department. From the target population of 173 a census sample was conducted to investigate the influence of information and communication technology tools on inventory management of Uchumi Supermarket Limited. 138 out of the 173 questionnaires were received back from the respondents fully filled which accounts to 80% response rate. The study found it crucial to ascertain the broad information of the respondents and their organizations since its structures the charity under which the study can fairly entrance the pertinent information. The analysis relied on the information of the respondents so as to classify the different results according to their knowledge and responses. Based on the gender, 62% of the respondents were male while 38% of them were female. The findings show that Uchumi Supermarkets Ltd had both male and female staffs; however the majority of them are males. Majority 38% of the respondents indicated that their ages

fell between 41 and 50 years 28.0% of the respondents recapped that they were aged above 50 years, 21 % of them indicated that they were aged between 31 and 40 years, while 13.0% of the respondents were between 21 to 30 years of age. Based on distribution on departments, 42.9% of the respondents were working in the finance departments, 19.0% of them were working in the human resource departments, 19.0% worked in procurement department, and 14.3% worked in the operations department, while 4.8% worked in marketing departments. The study findings showed that all the respondents occupied relevant managerial positions therefore they are aware of the influence of ICT on inventory management of Uchumi Supermarkets Ltd. 50.0% of the respondents indicated that they had worked in the Telecommunication Company for 10 to 15 years, 31.0% of them had been working in the Uchumi Supermarket Ltd for 5 to 10 years, while 19.0% had worked in the Uchumi Supermarket Ltd for 0 to 5 years. For that reason, majority of the respondents had enough experience on the influence of information and communication technology tools on inventory management of Uchumi Supermarket Limited. Majority of the respondents had at least an undergraduate degree and hence understood the information sought by this study, that is, 40.5% of the respondents had acquired a graduate degrees level of education, 50.0% of the respondents indicated that they had acquired a post graduate level of education, while 9.5% of the respondents indicated that they had acquired other levels of education such as ICPAK and Higher Diplomas. These outcomes mean that majority of the respondents had at least a graduate degree and hence understood the information sought by this study.

ICT and Inventory Management in Uchumi Supermarket Limited

The main focus of this study was to investigate the influence of information and communication technology tools on inventory management where the focus was on Uchumi Supermarket Limited. Accordingly, the respondents were required to indicate the extent to which information and communication technology (ICT) tools influence the inventory management of Uchumi Supermarket Limited. Based on the results 49% of the responses indicated that ICT tools influence the inventory management of Uchumi Supermarket to a great extent, 43% of them indicated to a moderate extent, 6% of them comprised of opinion that ICT tools influence the inventory management of Uchumi Supermarket to a very great extent, whereas 2% of the respondents recapped that ICT tools influence the inventory management of Uchumi Supermarket to a little extent. From these results, it is clear that ICT tools are a source of efficient inventory management hence competitive power for many companies. These results are in agreement with the findings by Haag and Stephen (2010) that as electronic business gain importance, new opportunities exist, and the wide spread use of internet is increasing the interest for the information technologies.

The respondents were further required to rate the effectiveness of ICT tools in the inventory management in Uchumi Supermarket Ltd. 55.8% of the respondents unanimously recapped that ICT tools in the inventory management in Uchumi Supermarket Ltd are less effective, 37.2% of them rated the ICT tools in the inventory management in Uchumi Supermarket Ltd to be moderately effective, 4.7% of the respondents indicated not effective, while 2.3% of them rated the ICT tools in the inventory management in Uchumi Supermarket Ltd to be much effective. From these results, it is clear that supermarkets are adopting ICT with the main goal of achieving operational efficiency. The study further sought the respondents' views on the

extent to which ICT influences the various aspects of effective inventory management in Uchumi Supermarket Limited. From the study, majority of the respondents indicated that ICT influences inventory efficiency/ lead time to a great extent, ICT influences inventory flexibility to a great extent and ICT influences inventory cost reduction to a great extent. On the other hand, they recapped that ICT influenced optimal stock levels to a moderate extent. The findings concur with Tsiakouri (2008) that through high levels of transparency and increased velocity in information flows across the supply chain risk can also be reduced. With cost effective approaches, it is essential to have a disturbance management culture.

Vendor Managed Inventory

The first specific objective of the study was to establish the influence of vendor managed inventory on inventory management of Uchumi Supermarket Limited. As such the study sought to ascertain the extent to which vendor managed inventory (VMI) influenced the inventory management at Uchumi Supermarket Limited. The results showed that majority (60.8%) of the respondents reiterated that vendor managed inventory influences the inventory management of Uchumi Supermarket to a great extent, 21.6% of the respondents indicated that vendor managed inventory influences the inventory management of Uchumi Supermarket to a little extent, while 17.6% of the respondents indicated that vendor managed inventory influences the inventory management of Uchumi Supermarket to a moderate extent. This implies that vendor managed inventory has a significant influence on the inventory management of Uchumi Supermarket. According to Baily *et al.*, (2008), VMI provides the opportunity to develop a much close relationship and binding relationship among the retailers and the manufacturers as well as giving a much better visibility of the real demand. The supplier takes the responsibility for operational

management of the inventory within a mutually agreed framework of performance targets which are constantly monitored and updated to create an environment of continuous improvement. The study also sought to establish the extent to which various aspects of VMI influence the inventory management of retail outlets in Kenya as specifically Uchumi Supermarkets Limited. Majority of the respondents reiterated that inventory level/ stock management and stock/inventory flow influence the inventory management of Uchumi Supermarkets to great extent, while quality information sharing and delivery of time/ efficient deliveries influence the inventory management of Uchumi Supermarkets to moderate extents. These results implied that the utilization of VMI affected inventory management in the Supermarket. This is in accordance with Rushton *et al.,* (2011), who established that a well designed and developed approach to VMI can lead not only to reductions in inventory levels in the supply chain, but also to secondary savings arising from simplification of systems and procedures. As such VMI provides the opportunity to develop a much close relationship and binding relationship among the retailers and the manufacturers as well as giving a much better visibility of the real demand.

The respondents were also required to indicate their level of agreement with various statements regarding the influence of VMI on inventory management of Uchumi Supermarkets. Majority of the respondents agreed that users received improved service levels, and cash flows, and vendors enjoy better visibility of changing demand and greater customer loyalty, VMI information improves forecasts of customers' requirement, thereby enabling the Firm to plan inventory to meet customer demand, lead to significant reductions in inventory holding right through the supply chain, the vendor is able to schedule deliveries efficiently, as it has better visibility of the client's requirements

and it can incorporate these requirements at an early stage its product schedules as shown by a mean score of 3.5937 and implementation of the Vendor-Managed Inventory system leads to improved service levels. In addition, the respondents remained neutral on that vendor managed inventory has been effective in retail supermarkets by improving stock management, cash flow and risk management as shown by a mean score of 3.4896 and reduced administrative costs due to elimination of the need to monitor levels, paper to computer entries and reduced re-ordering. These results concur with Fawcett *et al.,* (2006) who established that VMI enhances timely inventory replenishment hence ensuring availability of supply as demand arises.

Distribution Resource Planning (DRP) System

In its second specific objective, the study sought to assess the effects of distribution resource planning system on inventory management of Uchumi Supermarket Limited. Accordingly, the respondents were required to rate extent to which distribution resource planning (DRP) system influences the inventory management of Uchumi Supermarket Limited. Out of the responses obtained, 57% of the respondents felt that distribution resource planning (DRP) system influences the inventory management of Uchumi Supermarket to a great extent, 35% of them felt that distribution resource planning (DRP) system influenced the inventory management of Uchumi Supermarket to a moderate extent, 6% of them indicated to a very great extent, while 1% of the respondents reiterated that distribution resource planning (DRP) system influenced the inventory management of Uchumi Supermarket to a little extent. These responses implied that distribution resource planning (DRP) system had a significant influence on the inventory management of Uchumi Supermarket. These results were a reflection of Hansen and Mowen (2007) who established that distribution resource planning system tries to combine the need for lower inventory investment with improved customer service. Accordingly, DRP lowers inventory level to give organizations a competitive advantage due to production of quality products at low prices and responding faster to customer needs.

The study also sought to establish the influence of various aspects of distribution resource planning on the inventory management of Uchumi Supermarket Limited. From the study, majority of the respondents integration of planning and control influences the inventory management of Uchumi Supermarket to a great extent, customer service influences the inventory management of Uchumi Supermarket to a great extent as well as coordinating of flow of goods. On the other hand the respondents recapped that forecasting/projecting requirements influences the inventory management of Uchumi Supermarket to a moderate extent. The results concurred with the findings by Cousens *et. al.,* (2009) that DRP systems have effect of smoothing the operations of the firm hence reducing lead time. As such, the control system may have an implication on predictability of future demands, forecasting/projecting requirements, customer service, coordinating of flow of goods, integration of planning and control and speed of the firm's production scheduling to meet customer demand.

The study provided several statements on the influence of Distribution Resource Planning System on the inventory management of Uchumi Supermarket Limited and required the respondents to rate their level of agreement with the statements. Majority of the respondents agreed that DRP played a critical role in speeding up inventory scheduling execution, DPR enables physical resources requirements to be planned together with production and purchasing control, DRP was essential in updating the purchase order information in accordance with the customers' requirements, DRP enhanced the capability and

speed to providing products that meet individual customer's demand and DRP ensured that the Company has sufficient inventory to meet demands at any given time and that DRP system helped the Supermarket to determine precisely when and how much stock to purchase and process based upon a time-phased analysis of sales orders, production orders, current inventory and forecasts. According to these results, DRP provided the basis for integrating the inventory planning and control system from the firm to the market. These concurred with the remarks by Rushton *et. al.,* (2011) that DRP system take forecast demand and reflect this through the distribution system on a time-phased requirements basis and accurate demand and sales forecasts help a firm out of stock-out situations and allowed a business firm provide high level of customer service. The control system was fronted as to facilitate accurate prediction of customer demand and hence timely response to their requirements.

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This is the chapter summarized data collected and statistical analysis undertaken with reference to study objectives and research questions.

Summary of Findings

The study found that ICT tools influence the inventory management of Uchumi Supermarket to a great extent. This is a clear indication that ICT tools are a source of efficient inventory management hence competitive power for many companies. The study established that ICT tools in the inventory management in Uchumi Supermarket Ltd are less effective. According to the results, information technology is the most effective tool in decision-making process in inventory management. To achieve cost efficiency, capacity for stock and inventory has to be fully utilized, overheads have to be minimized as much as possible, usage of equipment that can do different functions and they

have to achieve higher productivity ought to be used. The study found that that ICT influences inventory efficiency/ lead time, inventory flexibility and cost reduction to a great extent. Through high levels of transparency and increased velocity in information flows across the supply chain risk can also be reduced. With cost effective approaches, it is essential to have a disturbance management culture.

Vendor Managed Inventory

The study established that vendor managed inventory influences the inventory management of Uchumi Supermarket to a great extent. The various aspects of VMI that influence inventory management of Uchumi Supermarkets include inventory level/ stock management and stock/inventory flow which influences the inventory management of Uchumi Supermarkets to great extents as well as quality information sharing and delivery of time/ efficient deliveries which influence the inventory management of Uchumi Supermarkets to moderate extents. Accordingly, the utilization of VMI affects inventory management in the Supermarket. The respondents agreed that users receive improved service levels, and cash flows, and vendors enjoy better visibility of changing demand and greater customer loyalty, VMI information improves forecasts of customers' requirement, thereby enabling the Firm to plan inventory to meet customer demand, lead to significant reductions in inventory holding right through the supply chain, the vendor is able to schedule deliveries efficiently, as it has better visibility of the client's requirements and it can incorporate these requirements at an early stage its product schedules and implementation of the Vendor-Managed Inventory system leads to improved service levels.

Distribution Resource Planning System

The study also found that distribution resource planning (DRP) system influences the inventory

management of Uchumi Supermarket to a great extent. It tries to combine the need for lower inventory investment with improved customer service. DRP lowers inventory level to give organizations a competitive advantage due to production of quality products at low prices and responding faster to customer needs. The study established that integration of planning and control, customer service and coordinating of flow of goods influence the inventory management of Uchumi Supermarket to great extents while forecasting/projecting requirements influences the inventory management of Uchumi Supermarket to a moderate extent. As such, DRP systems have an effect of smoothing the operations of the firm hence reducing lead time. The study further ascertained that DRP plays a critical role in speeding up inventory scheduling execution, DPR enables physical resources requirements to be planned together with production and purchasing control, DRP is essential in updating the purchase order information in accordance with the customers' requirements, DRP enhances the capability and speed to providing products that meet individual customer's demand and DRP ensures that the Company has sufficient inventory to meet demands at any given time.

Conclusion

The study concludes that ICT is useful in attaining efficiency in the inventory management of Uchumi Supermarkets. ICT applications such as VMI and DRP were found in the Business because they are easily understood, easy to implement and cost-effective. ICT systems help to make early decisions about inventory control in case there is any interruption in the supply and that IT better monitor demand for certain products and place orders to prevent an out-of-stock situation; the use information technology assists in inventory monitoring and asset visibility. This implied that not all ICT factors contributed to efficiency of inventory

management that was attained in this Supermarket and Uchumi had the capacity to have these applications installed.

Vendor Managed Inventory

The study concludes that VMI is a recent phenomenon in the retail supermarkets in Kenya having started in 2002 and steadfastly growing. The effectiveness of VMI in the retail supermarkets has been registered in improved stock management, cash flows, risk management, and management of the bullwhip effects associated with unpredictable swings in demand. While VMI has been voted best by the retail supermarket managers, it has its shortcomings associated with trust, turnover of suppliers and small scale suppliers who lack financial capacity to implement VMI concepts sustainably. Sometimes this interferes with customer satisfaction as some goods on VMI become one-offs due to the high turnover of suppliers because some new suppliers are yet to develop credibility in their respective area of supply.

Distribution Resource Planning System

The study also concludes that distribution resource planning effectiveness as a system affects inventory flow, lowers inventory level to give organizations a competitive advantage due to production of quality products at low prices and responding faster to customer needs and quality of information. This indicates that relationship and success of the DRP system is developed on the basis of implementing the system based on trust and reliability. The quality of ICT is very important to facilitate sharing of information among the inventory partners in the supply chain in Uchumi Supermarkets.

Recommendations

In general, the study recommends that the Organization should use advanced ICT to manage its inventory. These ICT systems would eliminate

events of stock outs. ICT systems would also help the supply chain department to plan in advance and ensure that there is enough space to hold the entire incoming inventory. With the help of competent staff in inventory control, a firm reduces the levels of inventories losses and improves on production and sales.

Vendor Managed Inventory

From the findings and conclusions, VMI provides the opportunity to develop a much close relationship and binding relationship in the Supermarket. The research thus recommends that the Supermarket should focus on developing strong ICT systems, strong warehousing facilities and/or by engaging large suppliers to lease from third parties. This would hasten the implementation of VMI in the Supermarket as well as ensure that users receive improved service levels, and cash flows, and vendors enjoy better visibility of changing demand and greater customer loyalty, improves forecasts of customers' requirement, enabling the Firm to plan inventory to meet customer demand, lead to significant reductions in inventory holding right through the supply chain, enable schedule deliveries efficiently, ensure visibility of the client's requirements and incorporate these requirements at an early stage its product schedules and implementation of the Vendor-Managed Inventory system to improve service levels.

Distribution Resource Planning System

The study also recommends that the Supermarket should enter into distribution resource planning agreements defining clearly the responsibilities and obligations of the parties involved. This would ensure a smooth flow of not only information sharing but also in the execution the inventory management responsibilities to avoid mistrust and eventual fall out. This DRP system would lower inventory level to give the Supermarket a competitive advantage, integration of planning and control, customer service and coordinating of flow of goods as well as forecasting/projecting requirements influences the inventory management of Uchumi Supermarket.

Recommendations for Further Studies

The study has investigate the influence of information and communication technology tools on inventory management in Kenya with a special focus on Uchumi Supermarket Limited and established that vendor managed inventory (VMI) and distribution resource planning (DRP) System are the main ICT aspects that affect inventory management in Uchumi Supermarket Limited. The retail industry in Kenya however is comprised of various other retailers/supermarkets which differ in their way of application of ICT and inventory management and have different settings all together. This warrants the need for another study which would ensure generalization of the study findings for all the supermarkets in Kenya and hence pave way for new policies. The study therefore recommends another study be done with an aim to investigate the influence of ICT on inventory management of supermarkets in Kenya.

In addition, another study could be conducted on strategies that organizations adopt to curb or mitigate the risks and challenges facing application of ICT in inventory management in organizations in Kenya as they are differently effective in the Firm studied. It would be useful to assess the extent of operational efficiency achieved after the system is fully operational in the supermarkets. This could be a litmus test on which of the strategies work better for various organizations.

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