



**THE ROLE OF ELECTRONIC INVENTORY CONTROL SYSTEM IN THE  
COMPETITIVENESS OF E-RETAILERS IN SOUTH AFRICA**

**By**

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**Date**

## **ABSTRACT**

Despite the advances made in relevant technology, some e-retail organisations are still struggling to improve their inventory control performance due to a limited application of such technology, a lack of relevant skills and inadequate supply chain management policies. In the e-retail industry, an inventory control system influences the competitive advantage such as customer services, customer satisfaction and customer loyalty of e-retailers.

This study therefore aimed to explore the competitiveness of electronic inventory control systems (EICS) of e-retailers. To achieve the study's objective, four research questions (i) What EICS does an e-retailer use to be competitive? (ii) How does the use of the EICS help the e-retailer to improve e-Retail inventory management? (iii) How does the use of the EICS help the e-retailer to improve e-retail order management? (iv) How does the use of the EICS help the e-retailer to achieve competitiveness? were explored by revealing the role that EICS played in e-retailers' gaining a competitive advantage. An e-retailer in South Africa was selected for a case study.

The research findings have revealed that ERP (LOCAD, NetSuite) WAERlinx are EICS used for managing and controlling inventory. Besides, with the implemented EICS the organisation can oversee inventory stock cycle transaction, perform a transparent inter-branch transfer and security control through a bar-code scanner, similarly, an improved inventory management performance. Also, order management is automatically processed and allocated, equally a faster customer demand execution and timely delivery based on customer location.

Lastly, the vital competitive advantages achieved through EICS implemented to include high customer satisfaction as a result of faster system services rendered than previously. Likewise, a rise in customer service efficiency and higher rates of customer loyalty because of the facts the company has fulfilled the promises made to their customers effectively and through many benefits such as improved customer service, delivery time frame period from the EICS.

The research was qualitative, adopting an interpretive approach to meet the research objectives. Interviews were conducted to gather data. The main outcome of the research was the generation of a general framework comprising a set of guidelines for e-retailers to follow in order to

enhance their competitiveness. All data collected during the study was treated confidentially and in line with the ethical principles of the University.

**Keywords:** e-Retailer, Order Management, Electronic Inventory Control System, Competitiveness

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## **DEDICATION**

I dedicate this dissertation to my husband Richard Ndaga Mondo, my sons, Imani-Nehemiah and Ivan-Zola Mondo, Imlah-Kimia Mondo, my sisters, Luzinga Charlotte, Fatu Minga, and my brother Ismael Minga, for believing in me and their unwavering support during the whole course of this project.

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## CLARIFICATION OF BASIC TERMS AND CONCEPTS

Term	Definition
<b>E-retailing</b>	E-retailing comprises the selling of products and services from business-to-business (B2B) and business-to-consumer (B2C) through an online platform Rekik, Syntetos & Jemai (2015).
<b>E-Retail Inventory Control Systems</b>	an inventory control system provides an organisation with operational policies and business structure for controlling the stock items and keeping track of inventory (Barwa, 2015). The practice of an effective inventory control system in e-retail improves inventory performance, consistency and reliability, thus achieving high levels of customer satisfaction (Samuel, 2012).
<b>Electronic Inventory Control System (EICS)</b>	Almajali, Mansour, Masa'deh & Maqable (2016) define EICS as the technology of controlling and managing inventory electronically through a computer system linked into a network for receiving information wirelessly from different devices.
<b>E-Retail Order Management</b>	In B2C (business to consumer sales), order management is the technical process of managing all phases of an e-retail omnichannel, such as order processing, customer service, forecasting and purchasing (Ishfaq and Bajwa, 2019). In brief, order management comprises a network that covers everything involved with processing orders.

**E-Retailer  
Competitiveness**

Hristoski, Kostoska, Kotevski, & Dimovski (2017) suggest that competitive advantage for an e-retailer depends on its supply chain competitiveness in meeting its customers' needs. An associated perspective is that the achievement of competitive advantage depends on the value that a business can develop for its customers (Subramanian, Gunasekaran, Yu, Cheng & Ning, 2014).

# **CHAPTER 1: INTRODUCTION**

## **1.1 Background to the research problem**

With the increasing use of the internet internationally, the e-retail industry is becoming very competitive. It has become necessary for new and existing businesses aspiring to engage in e-retail to understand the role of the electronic inventory control system in achieving and sustaining a competitive advantage within the industry (Chandra & Sunitha, 2012).

Chandra and Sunitha (2012) argue that for an e-retail industry to compete and secure a competitive advantage in highly competitive markets, it is imperative for it to understand the influence of using an inventory control system. The primary goal of an electronic inventory control system is to link customer demand to e-retailer procurement activities and delivery channels. And the benefit of effective management of the inventory control system is the ability to maintain an adequate stock of items (Chandra & Sunitha, 2012).

A practical electronic inventory control system (EICS) is one approach to attaining a competitive advantage. Almajali et al. (2016) define the EICS as technology adopted to control and manage inventory electronically through a computer system linked to a network enabling it to receive information from wireless devices. The EICS permits a greater exchange of information throughout the inventory control process (Almajali et al., 2016).

The objective of this study was to explore the role of electronic inventory control systems in the competitiveness of e-retailers. To achieve this objective, the research pursued a case study by posing four research questions to a selected e-retailer in South Africa. The study was qualitative, adopting an interpretive approach. The study gathered data through interviews to address its objectives. Confidentiality in the data collection and analysis processes was in line with the University's ethical principles.

Although EICS can have other effects on the inventory control performance of an organisation, this study was concerned only with the effect of EICS on E-Retail Order Management and E-Retailer Competitiveness, specifically the improvement of customer service, satisfaction and loyalty. Based on the findings of the study, a general set of guidelines is proposed to help e-retailers to be competitive.

A particular interest in Information Systems and the electronic inventory control system motivated this study. In a preliminary investigation, it was discovered that the inventory control system has the ability to provide a competitive advantage within the e-retail industry. The author applied an entrepreneurial mindset to interpret the extent to which entrepreneurs' contribution in the e-retail industry creates immense value in the national economies of most countries.

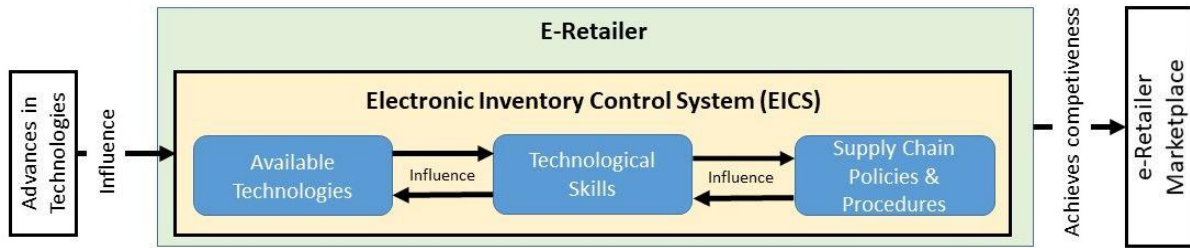
## **1.2 Problem statement**

Despite the advances made in recent years, some e-retailers are still struggling to take advantage of the capabilities afforded by technologies, technological skills and supply chain management policies (Patil & Rajiv, 2014) to improve their inventory control performance. E-retailers deal with a variety of products and services to enable them to meet their customers' preferences. Increasing usage of the internet means that customers have a growing interest in online shopping (Ritha & Haripriya, 2016).

Associated challenges are also rapidly expanding, because of e-retail industry growth, the industry becoming more competitive, inconsistent customer preferences, fluctuation in customer identity, and frequent changes of technologies for attending to customers' needs (Srivastava, Franklin, & Martinette, 2013). These challenges can be reduced to three questions in inventory control practices: what to order, how much to order, and when to place the order (Grubor & Djokic, 2016).

Previous studies, such as that of Naliaka and Namusonge (2015), have focused on how effective inventory management has given a competitive advantage to manufacturing firms in Africa. This study attempts to investigate the effect of the electronic inventory control system in the competitiveness of e-retailers in South Africa. In sum, the purpose of the electronic system is to add value to the organisation, and value creation is the essence of organisation competitiveness.

Wangari and Kagiri (2015) suggest that the creation of value may comprise financial and non-financial goals, and indeed, an inventory control system results in both financial and non-financial profits. The contribution of the electronic inventory control system to the competitiveness of e-retailers is illustrated in Figure 1.1, below.



**Figure 1.1 Problem conceptualisation**

### **1.3 Research aim and objectives**

The inventory control management system is essential in maintaining the right balance of stock. To address the problem as stated above, this study aimed to explore the effect of EICS in the competitiveness of e-retailers.

Given the aim, the objective of this study was: **to determine how EICS improve the competitiveness of selected e-retailers in South Africa.**

To pursue the stated objective and address the research problem, the following subordinate objectives were formulated:

1. To investigate the EICS used by a selected e-retailer
2. To examine how EICS helps the e-retailer to improve inventory management
3. To investigate how EICS helps the e-retailer to improve e-retail order management
4. To examine how EICS helps the e-retailer to achieve competitiveness

### **1.4 Research question**

#### **1.4.1 Main research question**

To address the stated problem by pursuing the above objectives, the main research question addressed by the study was:

**How can EICS improve the competitiveness of e-retailers in South Africa?**

### **1.4.2 Sub-questions**

In addressing the main research question, the study considered the following sub-questions:

1. What EICS does an e-retailer use to be competitive?
2. How does the use of the EICS help the e-retailer to improve e-Retail inventory management?
3. How does the use of the EICS help the e-retailer to improve e-retail order management?
4. How does the use of the EICS help the e-retailer to achieve competitiveness?

### **1.5 Ethical considerations**

Data collection raised the main ethical issue in this study. Data was collected through interviews arranged with the consent of the selected organisation. The study made sure not to breach the privacy and confidentiality policies of the selected e-retailer and protected the anonymity of the respondents.

The transcribed interviews were reviewed by the respondents to ensure their accuracy. This process helped establish verification and validity for the results of the study. The study presented the statements collected during the interviews verbatim and did not change them to suit the study or affect the results.

### **1.6 Limitation and delineation**

Academic literature on the role of EICS on e-retailers is limited, so this study could only use what was available. Also, the study focused solely on the effect of EICS in the competitiveness of e-retailers in South Africa. The study focused on managerial personnel from the following departments of the selected e-retailer: Customer Service and Marketing personnel (Branch Manager), Sales order management personnel (Sales Division Manager), Inventory management personnel (Warehouse Manager).



## **1.7 Significance of the research**

Given the increased usage of the internet and the competitiveness of e-retailing nowadays, there is a commensurately greater demand for e-retailers with more efficient and effective inventory control systems. This justifies the need for the EICS. It is envisaged that the findings of the study will be useful to existing and prospective e-retailers, and any organisations dealing with inventory. It will also contribute indirectly to economic growth and efficiency, as it attempts to assess the contribution of EICS capabilities to the competitiveness of e-retailers.

## **1.8 Originality of the research outcome**

The outcome of this research contributes to the current academic debate on inventory control in e-retailers by providing a general framework or set of guidelines for using EICS to enhance the competitiveness of e-retailers.

The outcome should also generate strategies among e-retailers for eliminating inventory shortage, improving inventory replenishment efficiency, and enhancing inventory turnover.

## **1.9 Summary**

Chandra and Sunitha (2012) claim that for an e-retail business to secure a competitive advantage in a highly competitive market, it must understand the value of inventory control systems.

Despite advances in technology, some e-retail organisations are still struggling to take advantage of the capabilities of new technology, technological skills and supply chain management strategies to improve their inventory control performance (Patil & Rajiv, 2014). Challenges to e-retailers are rapidly growing, because of expansion in the e-retail industry, the industry becoming more competitive, unstable and inconsistent customer preferences, fluctuation of customer identity, and frequent changes of technologies for attending to customers' needs (Srivastava et al., 2013).

To address the problem identified, this chapter presented the study's research objectives and questions. The main objective of this study was to determine how EICS can improve the

competitiveness of selected e-retailers, and the main question asked was: How can EICS effectively enhance the competitiveness of e-retailers? Literature relevant to exploring the research problem, objectives and questions is discussed in Chapter Two.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

With increasing use of the internet, consumers world-wide are becoming more interested in online shopping (Rekik et al., 2015). This trend is matched by massive expansion in e-commerce. The research problem for this study, as identified in Chapter One, is that some e-retailers have yet to take advantage of the capabilities of available technology, technological skills and supply chain management policies, to improve their inventory control performance (Patil & Rajiv, 2014).

In today's highly competitive e-retail industry, inventory control is one of the most critical factors, covering the planning and control of ongoing activities concerning customer demand, procurement and selling of goods. Consequently, many SMEs depend on utilising EICS to meet their customer demand and improve customer satisfaction to sustain their competitiveness (Patil & Rajiv, 2014). Almajali et al. (2016) claim that effective EICS is a significant resource capable of providing a competitive advantage to e-retailers. Previous literature on EICS focused mainly on the operational performance of manufacturing and retailing. There is little literature that focuses on the practices of an EICS in e-Retailing.

For this study, relevant existing literature was reviewed to establish whether through EICS e-retailers can achieve goals conducive to competitiveness such as improved customer service, customer satisfaction and customer loyalty. It is clear from this review that little scholarly attention has been paid to EICS and e-retailer competitiveness. Gaps identified in the academic coverage of the topic led to the conceptualisation of the problem, as set out in Chapter One. This conceptualisation helped frame the instruments used for data collection, analysis and interpretation.

This chapter provides a general discussion of the concept and purpose of e-retailing, an e-retailer inventory control system, EICS, e-retailer order management and e-retailer competitiveness. Section 2.2, below, offers a general overview of e-retailing.

## **2.2 Overview of e-retailing**

Since the study adopted a case study approach using a selected e-Retailer, it was crucial to elaborate on the overview of e-retailing. According to Rekik et al. (2015), e-retailing is the practice of selling goods and services through an online platform. E-retailing comprises the selling of products and services from business-to-business (B2B) and business-to-consumer (B2C). Rath, Behera, & Trivedi, (2016) note that e-retailing typically involves extensive displays and specifications of the products and services available.

E-retailing gives online customers a particular sensation of the products and services' nature and quality without demanding their physical presence. From the above definition and characteristic, e-Retailing can be defined as a catchphrase for any online business-to-consumer (B2C) transactions that occurs through an Internet platform. In simple terms, e-Retailing is the sale of detailed product and/or service online that intend to offer shoppers the same shopping experience as a physical one. The phrase e-retailing is mainly used to refer to online business-to-consumer (B2C) transactions that occur through an internet platform.

Narayanareddy, Prasannakumar, & Srinivasareddy (2016) point out that a successful e-retailing business requires strong branding. Moreover, to meet consumers' changing demands, e-retailing platforms must be attractive, regularly updated and effortlessly navigable. Products and services must add value to consumers' lives and stand out from competitors' offerings (Narayanareddy et al., 2016). Rekik et al. (2015) note that e-retailers have to price products or services competitively to avoid online customers favouring one business over another based-on cost alone. Strong branding is compulsory for the success of any e-retail, and the platforms must be striking, user-friendly and their online platforms must offer user-friendly and continuously updated stock information to respond to any change in customer demand (Rekik, Syntetos and Jemai, 2015). Additionally, the price of the product and service should be a competitive one, to avoid any favouritism from the customer based on the price of the display items (Ruby, 2016).

Since the customer's order is the essence of e-retailing, Ishfaq and Bajwa (2019) insist that e-retailers need an efficient delivery process to minimise lengthy waiting periods for the products or services purchased. Transparency in e-retailing practices is also crucial, to prevent customers' lack of trust and disloyalty (Goutam & Gopalakrishnan, 2018). Ruby (2016) agrees that successful e-retailing entails delivering any customer's order promptly, while practising transparency through effective customer service. For Rose, Clark, Smouel, & Hair (2012), e-retailing success hinges on website design efficiency, shopping effectiveness and speedy delivery of the purchased products or services. Real-time service delivery, average return and replacement process, the filling period for online orders, and response time rapidity to an online customer's queries are key elements to success in e-retailing (Rath et al., 2016). Narayanareddy et al. (2016) agree that an easy-access website design, an effective shopping frequency period, the speedy delivery of purchased products, and a friendly return and replacement process are crucial in a successful e-retailing business.

Ruby (2016) notes that e-retailing can also be an advantage for traditional brick-and-mortar stores by enabling them to reach more consumers worldwide and increase sales. On the other hand, individual and start-up e-retailers can launch an e-retailing enterprise from a single room the prime advantages of e-retailing are reaching customers over a wide geographical area, and incurring fewer overhead expenses than a brick-and-mortar store.

However, Rath et al. (2016) observe that building and maintaining an e-retailing website can actually be costly. Infrastructure costs for order fulfilment, warehousing goods, and dealing with returns are additional disadvantages of e-retailing. Rath et al. (2016) and Herington and Weaven (2009) agree that another disadvantage is the lack of trust among customers in e-retailer who is not well established, stemming from concerns about identity theft and the absence of physical customer service. Although e-retailing incorporates technology, logistics, and infrastructure in a marketplace with much faster growth rates than retail outlets, people are not ready for it to replace entirely traditional sales stores (Rose et al., 2012).

Rose *et al.*, (2012) have agreed that e-Retailing success hinges on the website design efficiency, shopping effectiveness and speedy delivery of the purchased product. Real-time service delivery, moderate return and replacement process, online orders form filling period, response time rapidity to an online customer's queries are the key elements to the success of e-tailing (Rath, Behera and Trivedi, 2016). Narayanareddy, Prasannakumar and Srinivasareddy, (2016)

also agree that an easy access website design, effective shopping frequency period, speedy delivery of purchase product, friendly return and replacement process as the most key element to the success of any e-Retailing.

Chen, (2012) state that through the Internet, customers can gather information about the product, and they compare a product across suppliers at a low cost. Moreover, e-retailing offers an increased market activity for retailers in the form of growing market access and information and decreased operating and procurement costs. Regardless of offering convenience and expanded product variety, e-retailing offer consumers ease access in comparing data from multiple sources (Rose *et al.*, 2012). Through the internet, customers can access product and service information of e-retailer and then compare at a low-cost offering from the competitors.

Like any retail business, e-retailing is open to several challenges and risks. As a business grows, these risks can affect potential revenue, scalability, margins and customer loyalty (Subramanian *et al.*, 2014). One challenge is the potential similarity of e-retailing operations, such as offering the same range of services to the same set of customers. E-retailers should therefore differentiate themselves from their competitors (Rath *et al.*, 2016) by, for instance, introducing a product differentiation strategy (Subramanian *et al.*, 2014).

Finally, according to Al-Karim (2013) and Öörni (2017), running an e-retailing enterprise can be risky because of one's vulnerability to hackers, website downtime, or lack of capacity to update to new technologies. The authors agree that e-retailer acts as a simple mediator between the customer and the supplier, and full control over each customer's order remains solely with the actual supplier. To develop an effective security framework is a necessity to avoid malicious intrusions by unauthorised personnel.

### **2.3. Overview of the South African e-retail sector**

Worldwide Worx (2016) declares in its South Africa 2018 e-retail report that e-retail in South Africa was due to pass the R14-billion mark in 2018, amounting to 1.4% of total retail and beginning to go mainstream. The 2018 figure, representing 25% growth over 2017, came as a surprise, given predictions that e-retail growth could slow down to below 20% in 2018. According to Alexander, Van Vuuren, Hermanus, Dassah & Mason (2016), massive investments in e-retailing, aggressive marketing, and the rapid uptake of new shopping

channels like mobile shopping and Instagram upset Worldwide Worx's (2016) predictions. Furthermore, most established e-retailers have enhanced their digital presence and refined their fulfilment models, while many traditional retailers see significant growth in their online offerings. This is why the success of e-retailing has been widely recognised (Rose et al., 2012; Narayanareddy et al., 2016; Rath et al., 2016).

The Worldwide Worx report indicated rapid growth in both 2017 and 2018, with slight further increases expected in 2019 and 2020. By 2022, e-retailing in South Africa is expected to rise to 2% of total retailing, and a doubling of almost R20-billion in sales from 2016 (Alexander et al., 2016). While e-retailers in South Africa remain responsible for only a small proportion of overall retail, the South Africa e-retail industry is maturing in terms of a broader range of operations (Alexander et al., 2016). Wills (2013) argues that clothing is the fastest growing e-retailing sector because of its low barrier to entry. In 2019 clothing was the fastest growing sector in e-retailing in South Africa, with the highest business turnover.

#### **2.4. E-retail inventory control systems**

In e-retail business, inventory is the most important investment, requiring a full-scale management system to operate effectively. Patil and Rajiv (2014) posit that an appropriate inventory control regime is mandatory for an e-retailer to accurately and effortlessly control its inventory while providing unique customer service. Rekik et al. (2015) agree that proper inventory management is essential for the successful functioning of an e-retailer.

Inventories are immense value to the successful functioning of the e-retailers. In e-retail organizations, inventories represent an important portion of the total current assets (Rekik, Syntetos and Jemai, 2015). In the e-retail industry, the inventory provides an important link between purchases of stock and sales of stocks and constitute a large percentage of the cost of purchase stocks (Rekik, Syntetos and Jemai, 2015). After all, an inventory is a record of a business's principal tangible investments of stock held for current and future sales (Patil & Rajiv, 2014).

According to Radzuan, Rahim, Anuar, Nawi & Osman (2015), an inventory is kept to meet both expected and unexpected increases in demand. A major benefit of maintaining an inventory is to take advantage of price breaks for ordering stock in bulk and thus secure a

stream of stock for re-sale rather than purchasing a single order from suppliers. Being accurate and up-to-date is crucial, because changes in the quantity of stock on hand can variously indicate a loss or an increase in sales, the presence of a backlog, or an efficient or inefficient supply chain policy (Ziukov, 2015; Costantino, Gravio, Shaban & Tronci, 2015).

In e-Retail business, as inventories represent an important value, thus, need to control effectively and efficiently. Al-Takim (2014) defines inventory control as an inventory practice of ensuring accurate stock counts at any given time. It is a reliable way of ensuring that the business meets customer expectations while minimising losses and maximising profits. Another view is that an inventory control system provides an organisation with operational policies and business structure for controlling the stock items and keeping track of inventory (Barwa, 2015). The utilization of an effective inventory control system in any e-retailer is of principal necessity. Additionally, maintaining and controlling inventory is vital for e-retail to have an available inventory to meet customer demand.

Maintaining and controlling inventory is vital for e-retail to avoid failure to meet customer demand. According to Mathien and Suresh (2015), the lack of an effective inventory control system in e-retailing directly influences customer service, satisfaction and loyalty, directly impacting e-retailer competitive advantage. The control of inventory is reliable ways to ensure meeting customer satisfaction and that an organization remains operational in minimizing losses and maximizing profit. The inventory control system provides the organization with operational policies and business structure for controlling the stock items and keeping track of goods in inventory.

Furthermore, for the growth of an e-Retail, effective inventory control is essential to be operational. The goal of inventory control is to generate the maximum profit from the slightest quantity of inventory investment without delaying customer satisfaction and inventory replenishment (Bjørnland, 2012). To improve its inventory performance and conquering high levels of customer satisfaction, most of the e-Retailer put in place an effective inventory control system (Samuel, 2012). And most e-Retailer invests so much finance in inventory, therefore inventory hold by them makes up for most of the e-Retail assets. However, a deprived inventory control system can distress the profitability of an e-Retail negatively. From the literature reviewed, it appears that the goal of inventory control is to generate the maximum profit without delaying customer demand and inventory replenishment (Bjørnland, 2012). The



practice of an effective inventory control system in e-retail improves inventory performance, consistency and reliability, thus achieving high levels of customer satisfaction (Samuel, 2012).

Mugo, Wanjohi & Wagoki (2014) claim that the purpose of inventory control is to meet customer demand, avoiding stock-outs while not incurring high inventory costs. Inaccurate forecasting can contribute to poor customer service and high inventory costs. Similarly, Patil and Rajiv (2014) argue that the purpose of e-retail inventory is to maximise customer service, replenishment and sales, without holding excessive stock.

The scope of inventory control moreover concerns the fine lines between replenishment lead time, 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 (Costantino *et al.*, 2015). Balancing these opposing requirements leads to ideal inventory levels, which is an on-going practice as the retail needs shift and react to the competitive environment. And Inventory control determines the extent of stock holding of materials.

Vaidyanathan (2011) state that inventory control involves essentially planning and managing inventory. Further, the author observes that the planning and managing of inventory encompasses forecasting in advance, knowing the exact quantity of stock needed and knowing the frequency of replenishment, thereby sustaining a resourceful economic approach. The primary purpose of inventory planning is to avoid both the overabundance and the unavailability of inventory items (Trinh, 2017).

The managing aspect of inventory control, often referred to as stock management, involves monitoring stock levels regularly and making decisions based on the inventory information generated by the inventory system (Vaidyanathan, 2011). Stock management involves inventory replenishment, managing demand variability, seasonal variances, stock out and returned stock. Many e-retailers replenish inventory according to sales projections or the actual demands of customers (Bala, 2010). The success of inventory replenishment thus hinges on careful inventory planning, which should result in higher sales, improved customer service and satisfaction, and hence greater competitiveness (Bala, 2010).

Almajali et al. (2016) allow that demand variability is a challenging and unpredictable fact that any e-retailer must face (such variability being measured as the difference between expected customer orders and actual orders [Gang, Li, Yin-Zhen, Jie-Yan & Tanweer, 2012]). Ferreira, Lee & Simchi-Levi (2013) consider demand variability as the most significant barrier to flawless inventory planning and stock management. According to Bala (2010), both online and offline retailers deal with demand seasonality (i.e. variable volumes of customer orders), though demand seasonality differs from one business to another (Wan, Hoogendoorn & Muhonen, 2017).

According to Ferreira et al. (2013), running out of stock and returned stock are costly to both e-retailers and offline retailers. Stock-out occurs because of higher customer demand, stock theft or poor inventory planning and replenishment practices (Vaidyanathan, 2011). As far as returns are concerned, inaccurate online descriptions, delivery of wrong items, items damaged in transit, and low product quality are the major factors to consider (Morganti, Seidel, Blanquart, Dablanc & Lenz, 2014; Sagban, 2010).

Bjørnland (2012) maintains that negligence in inventory control as enhances the risk of sales blockages and an inability to sustain recurrent profit. Similarly, Samuel (2012) claims that inadequate inventory control affects sales operations for any organisation in a highly competitive industry. Inventory control must be complemented by good management of all business processes, particularly sales, marketing and replenishment to satisfy customers' demands (Samuel, Gerald & Ondiek, 2014). Inventory control enhances profitability by generating an accurate overview of a firm's complete sales information, while also reducing the costs associated with the storage and handling of materials (Costantino et al., 2015).

However, the complexity of inventory control in e-commerce has rendered manual inventory control systems inadequate and forced companies to implement electronic systems. EICS as an information technology systems component is deemed critical to increasing inventory control competence and competitiveness due to its tremendous effectiveness.

## **2.5. Electronic inventory control system (EICS)**

Through the evolution of technology, information technology (IT) is bringing fundamental changes to the ways in which business operates. To achieve and sustain a competitive

advantage, businesses must develop the ability to meet customer demand while increasing customer satisfaction. The primary goal of an EICS is to link customer demand with business procurement activities and delivery channels; in brief, to achieve a competitive advantage.

Almajali et al. (2016) define EICS as the technology of controlling and managing inventory electronically through a computer system linked into a network for receiving information wirelessly from different devices. The EICS permits a greater exchange of information throughout the inventory control process. Similarly, EICS uses information-sharing infrastructure that combines electronic (internet) and inventory control activities to manage inventory control from procurement to selling and distribution (Wanjohi, Mugo & Wagoki, 2013). Wanjohi, et al. (2013) count among the benefits of EICS lower inventory levels, faster response to inventory problems, higher customer service levels, higher customer satisfaction and improved sales management practices.

In conclusion, EICS plays a vital role in managing inventory control. Although there are many EICS with different resolutions, advantages, and communication links, all alike facilitate the coordination of inventory control activities. Vendor Managed Inventory Systems, Radio Frequency Identification, and Enterprise Resource Planning are the EICS considered in this research study.

### **2.5.1 Vendor Managed Inventory System (VMIS)**

The fundamental concept of VMIS is that a vendor manages a retailer's inventory on the retailer's premises (Poutanen, 2010). It involves a vendor having access to inventory levels information and managing expected customer demand, sales and advertising activities, as well as replenishment policy (Radzuan et al., 2016). VMIS is one of the most widely accepted e-retail inventory management techniques employed to enhance supply chain efficiency and meet customer service and satisfaction expectations. Irungu et al. (2011) describe VMIS operation as a program of coordination between affiliate partners, in terms of which vendors are accountable for controlling inventory management and making replenishment decisions for retailers. Thus, the alliance is beneficial to the allied e-retailing partner.

Operating under VMIS provides e-retailers with a competitive advantage in terms of higher product availability and market productivity (Marquès, Lamothe, Thierry & Gourc, 2010),

cost reduction and higher customer service levels (Vieira & Portes, 2014). Lowered inventory levels, faster inventory turns, reduced ordering, lower administrative costs, increased sales, reduced stock-out costs, and reduced demand uncertainty, are all perceived as benefits of introducing VMIS (Marquès et al., 2010; Rana, Osman & Islam, 2015; Radzuan et al., 2016).

VMIS is nevertheless challenging and complex technology. To ensure its success, the allied business has to establish transparent collaboration and communication with the vendor (Vieira, 2014). Rana et al. (2015) similarly insist that a successful VMIS contract entails proficient teamwork with strong participation by both allied businesses.

One can also describe VMIS as a consignment stock management strategy used in both the retail and e-retail industry to achieve competitiveness. It is an inventory and supply chain management tool, in terms of which the vendor takes full responsibility for planning inventory replenishment and replenishment periods.

### **2.5.2 Radio Frequency Identification (RFID)**

RFID has become one of the most promising technologies in the market today (Yoo, 2017). RFID is a tracking and identification technology that utilises a radio frequency transponder. RFID technology supports a wide variety of applications in diverse fields such as retail, e-retail, public services, administration, research, and development, and as well in sports. RFID can help organisations enhance supply chain management in terms of stock identification (Boyinbode & Akinyende 2015). With RFID, organisations can manage, track, and secure items through the entire supply chain cycle.

According to Bunker and Elsherbeni (2017), RFID is a technology for reading and writing data remotely using radio waves through radio frequency communication. RFID identifies products automatically through radio waves that read a tagged item. Boyinbode and Akinyede (2015) note that RFID technology helps optimise the process of inventory control by minimising stock identification time. With highly accurate, real-time data monitoring, RFID enables businesses to improve the efficiency of inventory management, reducing stock-out, labour costs, and inventory inaccuracies (Yoo, 2017).

In sum, RFID offers the retailer a fast and effective way of tracking and collecting information about stock in a warehouse. Through using RFID, the inventory management process eliminates the challenge of traceability and enables the precise identification of items. RFID in retailing improves supply chain visibility and allows better demand forecasting, lower safety stock and shorter order cycle times.

### **2.5.3 Enterprise Resource Planning (ERP)**

According to Ting and Lei (2015), ERP is a technology for integrating all business functions, supported by multi-module application software. ERP is appropriate to all business organisations, providing a merged view of the activities occurring throughout the business operation. Finance, logistics, production planning, purchasing, inventory control, sales, marketing, and human resources management are the principal ERP technology modules (Ociepa-Kubicka, 2017). According to Ociepa-Kubicka (2017), orders and other transactions under an ERP system automatically flow inter-departmentally within a business. The order transaction instructs the warehouse to select the ordered items (using a barcode system) and schedule delivery. ERP can provide a visual indication of a product's availability at a glance (Ting & Lei, 2015). The warehouse in return informs the supplier to replenish whatever is short or has been sold. The finance department is notified to send the customer an invoice. Ting and Lei (2015) state that with ERP, the customer service department tracks the progress of the order through every step, updating customers' orders status. ERP improves departmental coordination within the organisation while increasing customer satisfaction (Ahlawat, 2017).

Even though implementing an ERP system can be costly, time-consuming, risky, and challenging, many organisations have adopted the technology. Certain businesses are even joining the next wave of web-enabled ERP systems with decision-support competencies (Yi & Tu, 2015). Although some consequences of installing an ERP system can become evident immediately, others come to the surface only after a relatively long period (Yi & Tu, 2015). Achievement of the full benefits from any information technology-based innovation normally takes several years, given the time required for learning and adaptation to change. Thus, ERP eventually enables an organisation to identify business trends and plan orders on a long-term basis (Ahlawat, 2017).

One can therefore classify ERP as a computer network system that enables access to a comprehensive database of information in a business. It is designed to replace paper-based systems by analysing data from all areas of business functioning, including purchasing, manufacturing, distribution, and inventory management. Consequently, ERP is designed around several modules that include finance, logistics, manufacturing, supplier management and human resources, each of which can stand alone or in combination with others.

## **2.6 E-Retail Order Management**

According to Pekonen (2013), order management is the practice of tracking sales, orders, inventory, and order fulfilment to meet customer demand. In general, order management requires a multi-dimensional system to trace practically every activity in an e-retail operation: customers' orders, sales chains, product description, stock availability and location, purchasing and receiving, returns and refunds, order processing and shipping. According to Shetty, Shareef, Shetty & Lohiya (2015), the order fulfilment process can be organised and streamlined through an order management system. Poor e-retail order management practices can break the e-retail brand (Ishfaq & Bajwa, 2019). The result is the back-end chaos of inaccurate order fulfilment, delayed shipments and unhappy customers with unfavourable brand perceptions (Shetty et al., 2015).

According to Leung, Choy, Siu, Ho, Lam & Lee (2018), an efficient and effective order management system improves sales visibility, customer relations and order processing, with a minimum of delays and back-orders. Leung et al. (2018) maintain that online order management has some distinguishing characteristics that vary, depending upon the specific channels of fulfilment. The widespread use of the internet has led e-retailers to choose an effective strategy such as in-house order fulfilment, drop-ship order fulfilment, and outsourced order management to sustain the effectiveness of order fulfilment.

In e-retailer, order management is the technical process of managing all phases of an e-retail omnichannel, such as order processing, customer service, forecasting and purchasing. In brief, order management integrates a network that covers everything involved with processing orders. The benefit of such integrated order management is the ability to manage customer information, including accessing accounting data regarding order payments, updating inventory level information, and reducing errors in accounting, shipping and delivery (Ishfaq

&Bajwa, 2019). Ishfaq and Bajwa (2019) postulate that integrating order management with an e-retailer website, shopping channels, delivery and logistics, payment processors, marketing services and fraud prevention, enables an e-retailer to operate smoothly. Integrating order management enables an e-retailer to operate more smoothly in all phases of the order process because of consistently updated information on orders, inventory levels, and sales forecasts (Shetty et al., 2015). Integrated order management also aids e-retailers to design effective marketing campaigns, accurately replenish inventory, and eliminate purchasing estimation. With integrated sales order management, e-retailers no longer process orders and create shipping labels on a different system, but coordinate between warehouse and shipping departments (Ishfaq & Bajwa, 2019).

According to Shetty et al. (2015) and Leung et al. (2018), however, an in-house order management strategy provides the e-retailer with the ownership of day-to-day e-retailing activities such as inventory tracking, receiving inbound freight, processing customer orders, billing, and shipping. An in-house order management strategy is most useful for e-retailers who require careful storage packaging and handling conditions. Nevertheless, a drop-ship order management strategy is a realistic alternative. Shetty et al. (2015) explain that with a drop-ship order management strategy, the e-retailer takes customers' orders through their website and then directly forwards customers' order information to the supplier to complete all the procedures from processing and packing to shipping. Drop-ship fulfilment can be a perfect strategy for small e-retailers who have financial constraints and limited resources. Drop-ship fulfilment has however certain limitations and drawbacks. A final alternative is an outsourced order management strategy, in which the outsourced partner is accountable for the entire order management procedure (Shetty et al., 2015).

The order management process involves more than just filling orders. The process allows e-retail to meet customers' requirements while lessening the total delivered cost. Implementing an EICS best enables e-retailers to streamline the order management process.

## **2.7 E-Retailer Competitiveness**

The growth of an e-retailer depends on its competitiveness. Since an e-retailer operates in a highly competitive market, it is mandatory for it to respond productively to the changing market

environment. The most vital challenge faced by e-retailers involves gaining and developing competitive advantage (Troshani & Rao, 2007).

Dilver (2015) defines competitive advantage as the level to which a business can develop and sustain a defensible position of superiority over its rivals' businesses. Another view of the concept is that competitive advantage is simply the business's ability to differentiate itself from its competitors (Awwad, Khattab & Anchor, 2013). Hristoski et al. (2017) suggest that competitive advantage for an e-retailer depends on its supply chain competitiveness in meeting its customers' needs. An associated perspective is that the achievement of competitive advantage depends on the value that a business can develop for its customers (Subramanian et al., 2014). From these views, one can infer that gaining a competitive advantage implies that a business is better able to satisfy customers' needs than its rivals.

Compared to brick-and-mortar retailers, e-retailers face severe competition coming from almost any geographical location (Subramanian et al., 2014). E-retail business markets are hyper-competitive because, given the low cost of establishing an online shop, there are no barriers to new entrants (Subramanian et al., 2014). Attaining a competitive advantage is absolutely vital (Hristoski et al., 2017). Maintaining a competitive position in the minds of customers has become difficult as customers have access to a wide range of online market platforms. Simultaneously, creating customer satisfaction and gaining customer loyalty are delicate challenges faced in e-retailing (Subramanian et al., 2014). Atnafu, Balda, & Liu (2018) maintain that nowadays e-retailers' competitiveness hinges on order management technique, financial control, IT and web applications to increase responsiveness and flexibility, and providing 24/7 customer service.

To sum up, one can describe e-retail competitiveness as the ability to deliver products and services more effectively and efficiently than one's competitors. E-retail competitiveness is the advantage gained by delivering greater customer value than one's competitors, either through lower prices or by offering more benefits that defend higher prices. Overall, e-retailers must be customer-oriented to survive in a hectic competitive market environment, by – for instance – offering a customised service to individual customers. That is why the measurement of competitiveness in this study focuses mainly on customer service, customer satisfaction and customer loyalty.



### **2.7.1 Customer Service**

As e-retailers increase in number and compete fiercely with each other, customer service is an increasingly essential influence on customers' choice of e-retailers (Öörni, 2017). Thus, the core strategic value for any e-retailing business is to provide customer service. Customer service involves satisfying and keeping customers, and eventually creating customer loyalty (Chen, 2012). Enlarging on this, Claessen (2013) defines customer service as comprising organised sets of work activity with the sole purpose of meeting specific business results for customers.

In e-retailing there is little contact between the customer and the retailer, which makes it imperative to implement a workable interactive customer service (Herington & Weaven, 2009). Through offering a functioning website, on-time deliveries, flexible return policies and more, the primary goal of e-retailer customer service is to make online shopping effortless (Herington et al., 2009). Claessen (2013) suggests that customer service be characterised by three levels. First, the reliability level, meaning that the business performs essential customer services. Second, the flexibility level is the ability to respond to and amend a failure in the customer service system. The last level is creativity or innovation, involving developing value-added programs for customers (Feihua, 2011). Customer service is a measure of service empathy, access time and staff courtesy, service quality, service speed and responsiveness. Customer service affects customer satisfaction and loyalty, hence business competitiveness (Rahman & Han, 2011; Wanjohi et al., 2013).

Chen (2012) suggests there are two modes in which an e-retailer can provide customer service. The first is standardised customer service, which is founded on establishing a consistent set of rules and procedures. Standardised customer service offers a uniform service to customers with little customer interaction in the service encounter (Chen, 2012). The second mode is the customised customer service, characterised by flexible rules and procedures to offer varied and individually customised services. Customised customer service is designed to solve a specific customer problem and adapt products, services, or communication to an individual customer's particular needs.

Öörni (2017) proposes a different classification of customer service, dividing the concept into self-service and assisted service. Self-service comprises information such as the detailed

product descriptions or frequently asked questions on the online platform that businesses offer to solve customers' problems. On the other hand, assisted service refers to the help provided by a business's customer service representative through different mediums such as phone, email, chat and social media.

Although customer service can be measured in several areas such as service empathy, access time and the courtesy of the staff, this research will focus mainly on the dimensions of service quality, service speed and responsiveness.

In short, customer service is a set of actions designed to improve the level of customer satisfaction before, during and after a purchase. It is all about offering tangible or intangible value in the service provided to customers, as a means differentiating the retailer and enhancing its competitiveness.

### **2.7.2 Customer Satisfaction**

Rahman and Han (2011) define customer satisfaction as a product of service evaluation by customers in respect of their needs and expectations. A high degree of customer satisfaction results in customer retention and boosts sales (Herington & Weaven, 2009). Failure to meet customers' expectations causes disappointment and a perception of poor service quality (Rose et al., 2012).

In e-retailing, customer satisfaction is a measure of the contentment of the customer with prior purchasing experience(s) (Pruthi & Gupta, 2017), or an evaluation of a product or service's ability to meet a customer's expectations (Rahman & Han, 2011). The main objective of customer satisfaction is to achieve customer loyalty.

Herington and Weaven (2009) distinguish ten aspects of customer satisfaction, as set out in Table 2.1, below. However, not every one of the ten points listed below needed to be present for customer satisfaction.

**Table 2. 1: Ten aspects of customer satisfaction**

Access	refers to how easily a service can be attained
Communication	is how information is carried and acknowledged by customers
Competence	refers to the skills and knowledge of the service provider
Courtesy	is shown by pleasantness and consideration of service providers
Credibility	is the confidence that customers invest in the business providing the service
Reliability	implies the reliable performance of the efficiency and effectiveness of service, done the first time correctly
Responsiveness	implies the disposition and willingness of employees to provide instant service
Security	is the absence of danger and hesitation, a sign of confidence
Tangibles	shows that customer service is credible
Understanding	refers to how well the business comprehends its customer expectations

To conclude, customer service is productive of customer satisfaction, and customer satisfaction is crucial for building up customer loyalty. According to Subramanian et al. (2014), enhancing customer satisfaction and achieving customer loyalty are significant challenges faced by e-retailers. Consistency is key. 2.7.3 Customer Loyalty.

Keeping customers loyal to a business is a significant focal point in the achievement of competitiveness in a highly competitive market. Claessen (2013) defines customer loyalty as a recurring customer purchase of a brand, which attests to his satisfaction. For Goutam and Gopalakrishna (2018), customer loyalty is an uncompromising commitment to always re-buying a service or product. Thus e-loyalty is a desirable attitude that leads to repetitive purchasing behaviour in respect of a particular e-retailer (Napitupulu & Aditomo, 2015).

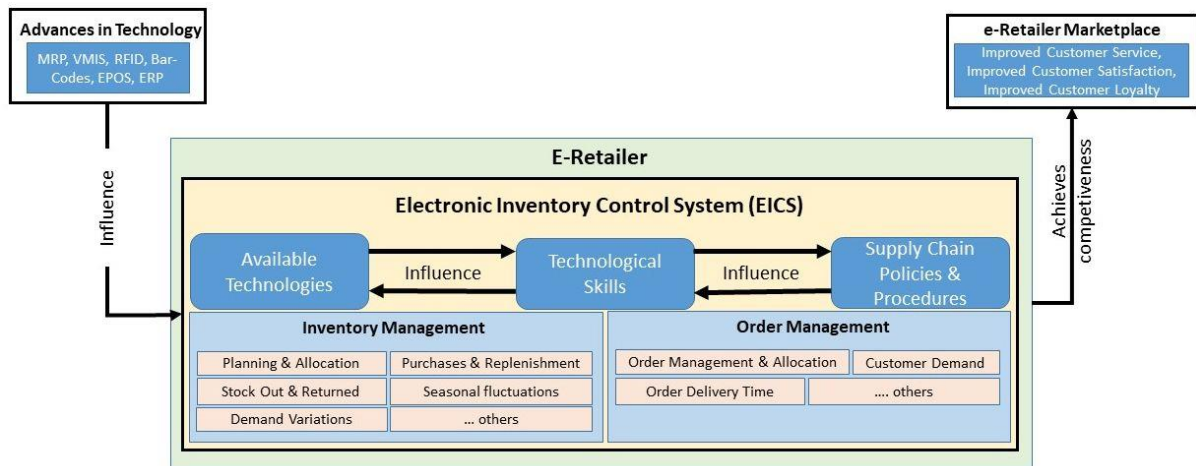
To compete in an e-commerce environment, a company needs effective website technology that provides for high quality customer services. According to Napitupulu and Aditomo (2015), technology directly affects customer satisfaction and customer loyalty. The knowledge sharing in e-environments concerning customers' perceptions, attitudes, and behaviour is vital to achieve customer loyalty (Goutam & Gopalakrishna, 2018). Website technology also enhances customer satisfaction and loyalty, to the extent that it offers an efficient, convenient shopping experience (Khoee, 2011).

Al-Karim (2013) notes that a business can keep a customer in the long term if it can respond to customer demand with improved customer service. Also, in e-retailing, customer loyalty serves as an information source for other customers and building customer loyalty remains a considerable but vital challenge.

The next section presents a conceptual framework developed using information gained from the literature reviewed to tease out EICS as a competitive advantage for the e-retailer.

## **2.8. Conceptual Framework**

The study used the framework set out below as a guideline for the data collection process, including the interview guide.



**Figure 2.1 Conceptual Framework**

The study developed the above conceptual framework to help conceptualise the problem as a social phenomenon and to serve as a guideline for understanding and interpreting this social phenomenon. It therefore informed the research design of this study, including data collection and analysis. The goal was to determine the role of EICS in achieving e-retailer competitiveness as a result of introducing advanced technologies.

The conceptual framework is further elaborated below:

1. EICS: this represents the combination of technology, technological skills and supply chain policies to manage and control the e-retailer inventory system to achieve e-retailer competitive advantage.
2. E-retailer Inventory Management: is a combination of inventory allocation, inventory planning, purchasing and replenishment, considering demand variations, seasonal fluctuations, stock out and the stock returned, for an e-retailer to manage and control an accurate inventory.
3. E-retailer Order Management: the technical process of managing all phases of an e-retail Omnichannel, such as order processing, customer service, forecasting and purchasing.
4. E-retailer Competitiveness represents the achievement of customer service, customer satisfaction and customer loyalty, in combination with the use of advanced technologies in both inventory and order management.

This study uses this conceptual framework to determine the role of EICS in the competitiveness of e-retailers. The framework contributes to the body of knowledge regarding how an e-retailer can achieve competitive advantage through EICS.

## **2.9. Summary**

Chapter Two has reviewed literature relating to the study topic, to clarify and develop certain key concepts: e-retailing, inventory control system, electronic inventory control system, order management, e-retailer competitiveness, customer service, customer loyalty, and customer satisfaction. The review has also produced a better general understanding of the research topic and its significance, furnishing useful information and knowledge to answer the project's research questions by grounding the analysis of the research findings.

The following chapter will elaborate on the study's research methodology. It will present details of the research design, method, and techniques used to collect and analyse data.

## **CHAPTER 3: RESEARCH APPROACH**

### **3.1 Introduction**

This chapter aims to describe and explain the research design employed to address the research problem, as formulated in Chapter One: to explore the effect of EICS in the competitiveness of e-retailers. The previous chapters have elaborated on the context and significance of the study. Chapter Two offered a review of the literature against which the findings have to be evaluated. The current chapter discusses the research methodology in detail and focuses on the approach, design, and sampling techniques employed to achieve the research objective.

The study used an e-retailer as a case study to source appropriate data to meet the research objectives. The study employed a qualitative research approach to conduct interpretive, exploratory research. Interviews were used to gather appropriate information to meet the research objectives.

#### **3.1.1 Research methodology**

The review of relevant literature revealed that factors conducive to competitive advantage among e-retailers amount to a social phenomenon. Research methods for the study of social phenomena can be divided into qualitative and quantitative approaches (Jackson, 2011). Quantitative research methodology measures social phenomena by statistical numbers; qualitative methodology, on the other hand, generates findings that amount to an in-depth understanding of social phenomena through words and opinions. Broadhurst et al. (2012) remark that quantitative analysis is appropriate for a large sample, for the generalisation of its results, while qualitative analysis focusses rather on a subjective interpretation of individual respondents.

A qualitative research approach was selected for this study because of the need to interact with the respondents and obtain first-hand, authoritative views. Quantitative research methods tend to involve no interaction with people (Ponelis, 2017), and in this context, quantitative research would limit the description of the phenomenon involved.

According to Jackson (2011), qualitative studies encompass an intensive and detailed analysis of the data collected from a relatively small number of respondents. Keutel and Werner (2011) argue that in a qualitative study, interviews are the most suitable for data collection, enabling a subjective understanding to produce new conceptual and theoretical knowledge of a phenomenon.

Qualitative methods are sometimes criticised because the subjectivity of the researcher intrudes and non-probability sampling is typically employed (Ponelis, 2017). The purpose of this study is not to generalise the results, but to explore the case in an in-depth way to understand a specific social phenomenon.

### **3.1.2 Research approach**

Jackson (2011) distinguishes two categories of research, inductive and deductive. An inductive approach involves answering specific research questions formulated at the beginning of the research process. The deductive approach entails achieving research objectives via testing hypotheses. The choice between the two approaches depends on factors such as the niche of study, research philosophy and the nature of the research problem (Jackson, 2011).

According to Mohajan (2017), the deductive approach applies to quantitative research, as it involves studies with firm methods and limits enquiry by posing closed-ended questions to research participants. The author argues that the purpose of quantitative research is to test hypotheses to confirm or contest a theory. Quantitative data is therefore collected for statistical analysis to approve or reject the hypothesis, which aligns it with a positivist approach to epistemology (Jackson, 2011).

In contrast to deductive reasoning, according to Jackson (2011), an inductive approach is affiliated with qualitative research. An inductive approach starts with observations and other data and formulates a general or theoretical conclusion towards the end of the research process. Inductive research therefore involves the search for patterns in the data gathered via qualitative research, enabling an understanding of the context of the topic under study to develop an in-depth understanding of the phenomenon. Typically, open-ended questions are employed (Broadhurst et al., 2012). Leal Filho and Kovaleva (2015) claim that with qualitative research, the data is organised into categories and analysed thematically rather than quantified.



This study aims to use qualitative methods to arrive at an understanding of how EICS can help e-retailers to achieve and sustain their business competitiveness. The researcher was thus part of the data collection process, having direct interaction with research participants in their environment.

## **3.2 Research Design**

An e-retailer was selected as a case study to investigate the role of EICS on the e-retailers competitive advantage. For this purpose, the study used an interpretive research design, to conduct exploratory case study research. The study employed an exploratory research design to discover new concepts and gain new knowledge and understanding of the phenomenon (Rahi, 2017).

The fact that there was little literature on the subject of EICS underpinned the choice of an exploratory study. This study employed an explorative research design due to its capacity to provide first-hand information about e-retailers' experiences and challenges regarding the implications of EICS for competitive advantage.

### **3.2.1 Overview of the Case**

Case study research is popular in business and management sciences research (Ponelis, 2017), inasmuch as it aims to analyse a precise environment, situation or organisation (Leal Filho & Kovaleva, 2015).

The case selected for study is that of one of the most innovative e-retailers based in South Africa, specialising in the direct importation and wholesale distribution of industrial switchgear, automation products and energy management. The selected e-retailer has an established network of depots in key areas in South Africa covering Cape Town, Durban, and Johannesburg. The business also has reputable distribution partners in neighbouring countries, making it possible to accommodate clients across the African continent.

The selected e-retailer is the world's best switchgear brands brought to Africa by people, passionate about service and represents over 40 high-quality national and international brands in Africa.

The business is passionate about customer service, satisfaction, and loyalty, with a mission of placing customers' interest first and supplying customers with only the highest quality products. For three decades the business has strived to deliver reliable, high-quality industrial electrical products, motor control switchgear and electronic automation products to their customers. The business is continuously growing and can offer customers an immense variety of products to support a range of different trades, including end-users, wholesalers, consultants, building contractors, system integrators, switchboard panel builders and engineering procurement companies.

The business is right in the forefront of power management, and it remains committed to embracing new technologies and pushing the boundaries of industry best practices while working with only the best global brands. It is known to represent the world's best switchgear brands such as Lovato, Finder, Delta, Hager, Socomec and Scame. As a result of its ongoing strategy to provide customers with the highest quality innovation from around the globe, the business is proud to announce the addition of Mercedes-Benz, Panasonic, Cembre and Huba Control to their list of global suppliers, along with over 50 new product editions from their current partners. It has various departments that perform unique functions and are equipped with qualified expert personnel.

### **3.2.2 Target Population**

Personnel in the departments dealing with EICS and e-retailer competitive advantage constitute the target population of this study. The selected e-retailer makes use of an integrated EICS, operating with other systems to serve the entire business. Participants were targeted based on their level of expertise and knowledge of the system, which positioned them appropriately to respond to questions relating to the EICS utilised and competitive advantage achieved. The target population for this study comprised only personnel in managerial positions.

### **3.2.3 Sampling Techniques**

This research made use of purposive sampling, a non-probability sampling technique usually preferred for case study research (Rahi, 2017). Purposive sampling occurs when the sample is chosen on the basis of the researcher's judgement (Broadhurst, et al., 2012; Rahi, 2017). The researcher makes this judgement with reference to target population characteristics such as

individuals' involvement in, experience of, and knowledge of the problem to be explored (Broadhurst et al., 2012; Leal Filho & Kovaleva, 2015). The purposive sampling technique is also known as judgment, selective or subjective sampling (Rahi, 2017). This sampling technique has been proven to be effective when limited numbers of the population serve as primary data sources due to the nature of the research design, aims and objectives.

Given that this research is exploratory, the findings were not generalised. The strategic participants selected for this study were:

- One participant in customer service and marketing (Branch Manager)
- Two participants in sales order management (Sales Division Manager, Sales specialist)
- Two participants in inventory management (Warehouse Manager, Procurement Specialist)

### **3.3. Data Collection**

Semi-structured, face-to-face interviews constituted the primary source of data. The method was appropriate for this research since the objective of the study was to determine the contribution of EICS to e-retailers' competitive advantage in the e-retail industry. The interviews contained questions about EICS its implications for competitive advantage via customer service, customer satisfaction and customer loyalty. Keutel and Werner (2011) define the interview as a qualitative research technique which involves conducting face-to-face conversations with a small number of respondents to explore their viewpoints on a specific research idea.

Leal Filho and Kovaleva (2015) identify three different forms of interview: structured, semi-structured and unstructured. Structured interviews comprise a series of pre-determined questions that all interviewees answer in the same order, and data analysis is relatively straightforward. On the other hand, unstructured interviews are usually the least reliable data collection method, and data collection is conducted informally as no questions are prepared before the interview (though there may be an interview guide) (Leal Filho & Kovaleva, 2015; Rahi, 2017).

Semi-structured interviews are a combination of structured and unstructured interviews. Semi-structured interviews involve preparing a set of questions to be answered by all interviewees, but additional questions may be asked during the interviews to clarify or elaborate on certain issues (Broadhurst et al., 2012).

Semi-structured interviews were chosen as a data collection method to obtain full phenomenological data and enable in-depth tracing of the hands-on experience of employees, thus meeting the objectives of the study.

### **3.4 Research Data Analysis**

The process used to perform the qualitative data analysis involved persistent critical reading and interpretation of the data collected, leading to increasing understanding (Leal Filho & Kovaleva, 2015). Data analysis thus involved identifying common patterns within the responses and critically analysing them to achieve the research aim and objectives. The interviews were audio recorded, and the recordings were transcribed verbatim before data analysis began. Notes made during the interviews were also transcribed and reviewed for consistency. The data was then summarised and categorised and subjected to thematic analysis.

### **3.5 Ethical Considerations**

The ethical issues in this study centred on data collection. Data was collected through interviews conducted with the consent of the selected organisation. The study agreed not to breach in any way the privacy and confidentiality policies of the selected e-retailer, nor reveal sensitive information to its competitors. The study also protected the anonymity of the respondents.

The transcribed interviews were reviewed by the respondents to ensure their accuracy. This process helped to achieve the verification and validity of the results of the study. The study presented the statements collected during the interviews ‘as is’ and in no way changed to suit the study or affect the results.

A consent letter was obtained from the Operations Manager to conduct the interviews, and ethical clearance was obtained from the Cape Peninsula University of Technology before data

collection started. Additionally, all interviewees who agreed to participate in the data collection process were informed of all ethical considerations before the interview went ahead. Interviewees were told that the interviews would be recorded.

Interviewee personal or confidential data was not collected as it was not required. The identity of the selected e-retailer was hidden to avoid private information from being divulged. The reliability of this study is demonstrated by its use of a range of appropriately referenced sources and by the transparent analysis process.

### **3.6. Summary**

The chapter discussed the research approach, methodology and design adopted in the study to achieve the aim and objectives of the research. The study adopted a qualitative research approach and used an interpretive exploratory case study design. Semi-structured interviews were conducted to gather relevant data to meet the research objectives. Permission to conduct the research was obtained from the selected e-retailer, and due consideration was given to issues of confidentiality, validity, and reliability. The next chapter presents the analysis and interpretation of the data collected.

## **CHAPTER 4: ANALYSIS AND INTERPRETATION OF FINDINGS**

### **4.1 Introduction**

The first three chapters constitute the theoretical part of this study and serve as the basis for the analysis and interpretation of the findings. A general framework was proposed for improving e-retailer inventory control performance through EICS, with the aim of achieving competitiveness. This framework is reintroduced in Chapter Five along with the conclusions of the study.

This chapter presents an analysis of the qualitative data collected to meet the research aim. The fieldwork was conducted at an e-retailer, and the unit of analysis was the role of EICS on that e-retailer's competitiveness. The analysis centred on how customer service, customer satisfaction and customer loyalty were enhanced through the use of EICS.

### **4.2 Data analysis and interpretation of data**

This section is dedicated to qualitative analysis of the concepts and meanings gathered through the collection of data.

The research questions were developed and subdivided into four research sub-questions in order to address the following main question:

#### **How can EICS improve the competitiveness of e-retailers in South Africa?**

The research sub-questions were divided into four parts: first, to collect data about EICS currently in use; second, to understand how EICS has improved the current inventory system performance; third, to gauge the improvement of the order management system through EICS usage; and fourthly, identify customer service, customer satisfaction and customer loyalty as aspects of e-retailer competitiveness as achieved through EICS usage.

#### **Question one: What is the EICS that the e-retailer uses to be competitive?**

It was deduced from the study that ERP (LOCAD, NetSuite) and warehouse management system (WAERlinx) as the two EICS used. For EICS modules, all participants mentioned Warehouse management, Procurement, and sales and distribution are the three EICS modules

implemented. The selected e-retailer is currently the only e-retailer in South Africa using WAERlinx and NetSuite, which means that its operating practices are much quicker and accurate, especially in terms of inventory counting and predictions.

The benefits gained from the usage of the adopted EICS include the effectiveness of the business to operate effectively during stock counting. Further, being a cloud-based system, the EICS has eliminated the business risk in terms of service and also has reduced operating risks cost. Plus, the business can see exact inventory or stock levels at any given time. And liaise with suppliers more efficiently and effectively.

The screening process of the EICS was conducted before its adoption in terms of the logistics, procurement and sales management needed to operate productively to meet business needs and customer requirements. The design of the system according to the organisation needs was the biggest challenge. But eventually, after the complete customisations, all the implemented modules were integrated and working as intended. Another challenge was getting people to understand how the new system interfaces.

We conclude that EICS influences the competitiveness of e-retailers. EICS technology emerged as a significant contributing factor to the competitiveness of the e-retailer by optimising and automating e-retailer inventory management and order management processes and enforcing inventory and order policies.

The respondents answered the following questions:

**Table 4.1: EICS used to be competitive**

<b>QUESTIONS</b>	<b>RESPONDENTS</b>	<b>RESPONSES</b>
<b>Which EICS do you use in your organisation?</b>	Branch & Operation Manager	For our warehouse management system, we use WAERlinx, NetSuite: ERP System
	Warehouse Supervisor	We use WAERlinx as our warehouse management system.  The other two systems we use for our backorder is NetSuite and LoCad.  LoCad pulls out the backorder report for our inventory demand and NetSuite is for our sales
	Procurement Specialist	We are currently using WAERlinx, NetSuite: ERP System

QUESTIONS	RESPONDENTS	RESPONSES
	Sales Specialist	Only two systems are implemented NetSuite: LoCad and WAERlinx
	Sales Supervisor	<p>So, we use two systems. We use WAERlinx and LoCad.</p> <p>WAERlinx is for our inventory control at the branches. So, it's the inventory system we used for receiving inventories in the branch, and everything has to do with how much stock we have, that's the system that releases the order that we have for the customer, and that comes from our sales side. So, it's a different system on sales but a warehouse that manages the stock, that's what WAERlinx does.</p> <p>LoCad is the one we use at the distribution centre. So, we got a distribution centre where they use LoCad that help them with the prediction for the ordering of stock. For example, it will look at our sales, look at how much stock we need to order for the suppliers and then generate the purchase order from there.</p>
<p><b>What are the modules/ implementations areas of the chosen EICS?</b></p>	Branch & Operation Manager	Warehouse management, Sales
	Procurement Specialist	Sales and Distributions, Warehouse, and procurement
	Sales Specialist	More like Inventory stock or order replenishment on LoCad
	Warehouse Supervisor	With our system is inventory only, so you get basic reporting out of it for picking times and stuff like that. The system generates



QUESTIONS	RESPONDENTS	RESPONSES
		<p>information regarding the inventory such as inventory location, stock level quantities. Also, it gives us live data such as who was the last person to handle a certain inventory code and when last inventory was counted. And if there was a sales order put through, the system will give us the sales order number, how long it took the person to pick the order. We can say there is also a sale module. The sales module is more for reporting.</p>
	Sales Supervisor	<p>For WAERlinx is more like for inventory management, distribution of stock, order fulfilment or replenishment and LoCad is for forecasting.</p>
<p><b>How did you evaluate the EICS before you adopted it?</b></p>	Branch & Operation Manager	<p>We went through a screening process. We screen a range of three to four service provider, and we obviously look in term of pros and cons, such as logistic, procurement sales, pretty much what requires for one system</p>
	Warehouse Supervisor	<p>Yeah, the adoption of the system was evaluated through different people, and I was not part of all the evaluation process.</p>
	Procurement Specialist	<p>Really don't know, I was not here yet</p>
	Sales Specialist	<p>the evaluations were done by senior and support team</p>
	Sales Supervisor	<p>I was not involved in the decision of using the system. But from what I understand what they did was to look at the system that we used before and then look at trying to get</p>

QUESTIONS	RESPONDENTS	RESPONSES
		something that will do everything that the previous system used to do and then do other things as well. Because we wanted to have a system where it will be just easy to do everything only from one system and not have to use other systems, like for example, not have to use an Excel sheet when counting stock. We were trying to get the system that will be easier to report from it.
<b>What are the benefits gained from the use of EICS?</b>	Branch & Operation Manager	The system has given us benefits of being the only one in the industry using these two systems at the moment. The system being a cloud-based system, it has eliminated risk at the office in terms of service and reduced operating risks cost.
	Warehouse Supervisor	Definitively by doing things much quicker and more accurately
	Procurement Specialist	So faster, liaise with supplier are more efficient and effective
	Sales Specialist	We stock much accurate on Customer demand and stock counting are more effective
	Sales Supervisor	A lot. So, counting of our stock now is much easier and quicker, and it's very effective now because we can literally count stock and still operate at the same time. Previously when stocktake was performed, we had close and shut off the system and count stock because then, you couldn't count and operate at the same time. But at the moment sales can still go on, load orders and we can still count stock. So, it makes our operation much more

QUESTIONS	RESPONDENTS	RESPONSES
		manageable, much more effective, and also in terms of doing our variances when count stock it makes it easy. It's easier for everybody across all our branches to see precisely how much stock we have in any given time, in any given branches.
<b>What challenge (s) did you face when adopting the EICS?</b>	Branch & Operation Manager	The challenge was the design of the system for the company requirements/ needs. So, we went through an extensive three to six months planning process to ensure that the system was designed to our requirements, and that was for both system the ERP system and the Warehouse management system.
	Warehouse Supervisor	The change of the old system to the new system was the challenge because it was completely different than the system we used before. But now we got used to the new system, and it is much better, it speeds up the process much, a lot against the old system.
	Procurement Specialist	I do not, was not part of the team
	Sales Specialist	The new interfaces were completely different from the previous one
	Sales Supervisor	If you are moving from one system to another, there is a lot of challenges because first, you were used to a particular system. Another challenge at the time was that the new one is an out of the box system that needed to be customised to the company need. And in the beginning, while we were still customising and trying to get everything needed to be done and we start realised that

QUESTIONS	RESPONDENTS	RESPONSES
		<p>certain things don't really work the way they should, and different customisation was required to use. So, the design of the system according to the organisation needs was the biggest challenge. But eventually, when all the customisations were complete, everything was working, it became easier. Another challenge was getting people to understand how the new system works because people were used to the previous system.</p>

**Question two: How does the use of the electronic inventory control system (EICS) enable e-retailers to improve e-Retail inventory management?**

When asked questions on the management of inventory allocation, inventory planning, purchasing and replenishment, demand variation, seasonal fluctuation, stock out, returned stock and stock security control, the respondents said that the customisation of their EICS had allowed the company to oversee inventory stock cycle transactions and perform inter-branch transfers in transparent ways. The allocation of inventory occurs automatically and accurately. The EICS does all the planning, purchasing and replenishment automatically – based on the accurate customer demand information on the system – without any human interventions to minimise problems related to procurement.

Additionally, the customised EICS forecasts company inventory stock requirements depending on the movements of the stock over a quarterly period. The system generates an authorisation that triggers the return of stock more accurately and much faster. With the new system, stockout rarely occurs, as the systems look at historical sales data and establish a required inventory stock level to meet customer demand. Further, quarterly cycle count and daily variances checks are performed as a security control by the system to check any inventory discrepancy. A bar-code scanner is used to perform security control.

Based on the data collected, one can say that EICS is a very transparent system that process the allocations of business inter-branch inventory automatically to meet customer demands. Also, the allocations of inventory on customer order are based on first come, first serve form the distribution centre. Lastly, the EICS analyse previous sales movement and suppliers' replenishment time frame to generates a report that project future demand. These predictions help to minimise stock out or any delays for customer demands.

Below are the questions answered by the respondents relating to e-retail inventory management.

**Table 4.2: e-Retail inventory management through EICS**

<b>SUB-QUESTIONS</b>	<b>RESPONDENTS</b>	<b>RESPONSES</b>
<b>How does the use of EICS enable you to manage inventory allocation?</b>	Branch & Operation Manager	WAERlinx is designed explicitly for warehouse management. Accordingly, it allows us pretty much to oversee any part of the process from receiving to dispatch, picking, packing, checking. It also allows us to do inter-branch transfers amongst the groups and tracks movement amongst all our warehouses. WAERlinx is a very transparent system; therefore, inventory allocation is very transparent.
	Warehouse Supervisor	For the allocation of inventory, it depends if the item had been defaulted set up, then it's easier, as soon we receive inventory in, will go to the default allocation. And if the inventory wasn't set up before, then, the system will only give us the correct location for the available specific stock item in the system.
	Procurement Specialist	WAERlinx is a very transparent system, inter-branch inventory allocations occur

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		automatically to meet our customer demands
	Sales Specialist	LoCad system allocates stocks on customers order based on first come, first serve. This process happens automatically from the distribution centre.
	Sales Supervisor	What the system does is, we load order in our side (sales) and then the order goes through to this warehouse management system, and orders are automatically allocated if we have stock. The orders are allocated on a first-come, first-serve basis. And what also the system does is if something is not in stock then it goes on to backorder. Thus, LoCad then automatically picks up what is in backorder on each branch and then allocate the stock from the distribution centre and then send the allocated inventory to the other branches. In a word, the system allocates inventory automatically from the distribution centre.
<b>How does the use of EICS help you manage your stock in term of the inventory planning, Purchasing and replenishment?</b>	Branch & Operation Manager	We have an I-driven system behind the back that look at our movements and our demands. The I-driven system takes a few years movement and establishes what our requirements are. Hence, the system is fully automated, removing most human interventions or problem faces with procurement. We still can manually adjust what is telling us to place from our

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		<p>overseas suppliers, but that is minimal now that we have understood the system and it has been working for quite a while. At any given point in time, we can guarantee a roughly 94% performance rate on over 15000 lines up items, which I can guarantee most of our competitors cannot do at the moment.</p>
	Warehouse Supervisor	<p>From my side, we don't do purchasing at all. That is completely procurement in our organisations. The planning, purchasing and replenishment is done in our distribution centre. Planning, purchasing and replenishment are based on the demand that is automatically accurate on the system.</p>
	Procurement Specialist	<p>What Wearlinx does is analysing our prior sales movement and compares it to the current demand to project future demand.</p>
	Sales Specialist	<p>The process is done based on the selling average period and suppliers' replenishment time frame to predict future stocks and sales. All the prediction is done automatically.</p>
	Sales Supervisor	<p>As I said, there are two systems for purchasing and fulfilling an order. The system we use for purchasing look at the prediction of stocks and sales history. Simultaneously, it looks at the particular selling average time to supply us stock requires for the next three months. The system also considers the delivery time</p>

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		<p>from the suppliers as well. It does all prediction on its own, and it makes it easier. Now in terms of order fulfilment on the WAERlinx side, the system looks at what we have on the system and fulfil them as stock comes in. I think the system that does more work on the purchasing side because we need to have stock all times.</p>
<p><b>How does the use of EICS help you manage your stock in term of the demand variations, seasonal fluctuations, stock out and returned stock?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>Yeah, the back system that helps to manager demand variations and so on, that's called demand management system, and that's what we use at the moment, so it looks at the movements over a while and can forecast what our requirements are. Still, it also depends on our input with projects since we are a very projects-based business. Projects can affect the ordering, so we need to be careful with that.</p>
	<p>Warehouse Supervisor</p>	<p>Most of the time, the system runs quarterly. For an instant, if this quarter the demand has dropped then the system will order less, and if customer demand picks up, the system will order more, and then it will adjust itself.</p> <p>In case of a stock return, the returned stock is book back into stock; obviously, it will deduct the quantity you have put back into stock from the demand. And the process is all automatic.</p>



SUB-QUESTIONS	RESPONDENTS	RESPONSES
	Procurement Specialist	the system looks at sales variances from the previous quarter and then create a particular stock variation considering the pick-up of the sales and the time our overseas suppliers replenish schedules
	Sale Specialist	<p>LoCad analysis quarterly sales demand variances quarter the demand. This help to minimise stock out or any delays for customer demands.</p> <p>In case of the returned stock, I think the warehouse department usually process the returned stock and the system will generates an authorisation.</p>
	Sales Supervisor	<p>The system is more on looking at historical sets because you can really say there is a particular seasonal variation, because things sometimes change. On this occasion, the system looks at sales from the previous year at certain times because there are picks at a certain time and then create a variation for the particular stock by considering the pick-up of the sales and the time our overseas suppliers close as well.</p> <p>Regarding stockout, the system generally looks at a historical average sale. So, we rarely run out of the stock, but it happens it is because we typically sold more than we usually will sale.</p>

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		<p>In case of returned of stock, the returned stock is processed into the system, and then the system generates an authorisation for goods returned to receive back the goods in stock. Afterwards, the customer gets the credit. We can say, the system automatically gets the returned goods into stock more accurately and much faster.</p>
<p><b>How does the use of EICS assist you in the security control of stock management?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>We do cycle counts on a quarterly base, and variances check occur daily. If any variances occur, the system being a very transparent assist to track where the discrepancy is, and 9 out of 10 times we can identify the problem whether it's theft or humans' interventions or programming error or system errors. It generates a daily report to check any discrepancy.</p>
	<p>Warehouse Supervisor</p>	<p>In certain aspects, yes, we can see who the last person was to handle inventory if it's done on the system. And you can see a complete history of those items. So, the system assists in providing a historical report on the items.</p>
	<p>Procurement Specialist</p>	<p>The system records all stock manoeuvres and generates a daily report to avoid discrepancy</p>
	<p>Sale Specialist</p>	<p>Being a transparent system, any wrong picked up item are automatically signalled.</p>
	<p>Sales Supervisor</p>	<p>In terms of security control, we use a bar-code scanner to scan the item in the warehouse, and if a wrong bar-code is</p>

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		<p>scanned, the system automatically will show a wrong item has been picked up.</p> <p>In the case where there might be theft, we do regular cycle counts, with regular cycle count, we can see if an item is missing. So, it easier to pick up those irregularities unlikely to have to wait until the end of the year when you count the stock to see that there are issues.</p>

**Question three: How does the use of the EICS improve e-retail order management?**

With the customised EICS in place, the order is automatically processed according to what the system reports. Also, the EICS automatically allocate orders and fulfils any backorders. Similarly, customer requests are executed much faster because inventory stock items are automatically allocated into the order, and the order is released automatically. The system has enabled the company consistently to deliver orders on time, the system adjusting delivery time according to customer location.

The system has contributed to speeding up order delivery time, since the order is fulfilled on a first-come, first-served basis. The EICS has empowered the company to track the full movement of the order through the system. Ordered items are correctly identified by being allocated a unique number that is automatically generated by the system to fulfil customer demand.

We can conclude that with the EICS, all stock manoeuvres are reported on daily basis, and this help to check orders movement constantly in order to accurately tracked customer demand and therefore, execute more effectively customer demands with no delay. Last, the customised EICS automatically forecasts the stock required by generating a report for current and futures customer orders for the e-retailer.

The following are the questions answered on e-retail order management:

**Table 4.3: E-retail order management through EICS**

SUB-QUESTIONS	RESPONDENTS	RESPONSES
<p><b>How does the use of EICS enable you to control your order management?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>The system we use to forecast our order is based on current and pasts user patterns. The system then indicates to us what we require, like I said we also need to enter what we are expecting. So, it takes what we have done and what we are expecting and then indicate to us what is required. The order is automatically processed, the only human interactions are when orders are placed in the system. Then, the system looks for the stock within the country, and pull whatever stock is required for that branch and automatically allocate the order to fulfil any backorder.</p>
	<p>Warehouse Supervisor</p>	<p>What LoCad does it to look at the demand, and then someone will go through it to see if there is a need to order or no not. Order is processed according to what LoCad report. Basically, order management is done according to what the system reports.</p>
	<p>Procurement Specialist</p>	<p>LoCad forecasts automatically the required stock for our demand and it generates a report for current and future orders</p>
	<p>Sale Specialist</p>	<p>Both systems (Wearlinx and LoCad) have online platform for customer with an account with us to load their orders and these loaded orders are directly connected to the warehouse management system. And us sales personnel we manually load one off order as well,</p>
	<p>Sales Supervisor</p>	<p>The orders are manually loaded onto the system by sales personnel. And we got an online system as well where some customers</p>

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		<p>have an online account to load their orders on their side onto the system. Those loaded orders automatically come to our warehouse management system. So basically order (manual or online) are automatically processed effectively.</p>
<p><b>How does the use of EICS enable you to execute customer demand?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>So, since the system is automated, customer demands are also executed automatically.</p>
	<p>Warehouse Supervisor</p>	<p>Customer demand with once-off order can be executed manually, but if there is an extra demand required, the system executes it automatically.</p>
	<p>Procurement Specialist</p>	<p>Helps automatically forecasting customer demands and executing them much faster.</p>
	<p>Sale Specialist</p>	<p>Customer demands are executed more effectively, from orders loading and orders releasing. Customers get automatically orders executions notifications.</p>
	<p>Sales Supervisor</p>	<p>It makes customer demand execution much more manageable because if we don't have an item in stock, I don't have to remember to go and check. Thus, When the stock comes in, it gets automatically allocated on to the order, and the order gets released. Then customers get a notification to inform them that the order is ready for collection. So, the EICS makes order execution so much easier.</p>
<p><b>How does the use of EICS contribute to the order delivery time?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>8 out of 10 of our orders is delivered within 15 minutes, so it is ready for the customers within 15 minutes. Anything for delivery is prepared within 45 minutes, that's the</p>

SUB-QUESTIONS	RESPONDENTS	RESPONSES
		company average, and then it also depends on the item we still awaiting.
	Warehouse Supervisor	Order delivery time depends on where the customers are situated in the first place. But what we usually do is we send to the ordered item from our branch to the closest branch of the customer. For an instant, if it's a Durban customer, we will send the parcel from us, and Durban will deliver. Otherwise, the customer can use a courier, and the order goes directly from us to the customer. So, since everything is done automatically, and the delivery frame period is three days, order delivery is always on time. The system adjusts delivery time accordingly
	Procurement Specialist	Orders delivery is faster, there is absolutely no errors in executing them.
	Sale Specialist	LoCad executes order delivery on first come first serve basis according to the delivery time frame mostly 15 to 45 minutes.
	Sales Supervisor	Order delivery is faster now than previously. So previously, when the stock comes in for backorder, we had to release that order manually. If I forget to release the order, then it will just sit there. For instance, if no attention is paid on backorder, then stock comes in, and another person loads an order, the backorder stock can be sold before I can supply our customer. But with the current system, orders are fulfilled according to first-come, first-serve basis.

<b>SUB-QUESTIONS</b>	<b>RESPONDENTS</b>	<b>RESPONSES</b>
<b>How does the use of EICS contribute to accurately tracking customers' orders?</b>	Branch & Operation Manager	The system has contributed to tracking customers' order accurately. For instance, if there is stockout, the system can forecast when new stock will be arriving, and it updates daily depending on whether an order is delayed.
	Warehouse Supervisor	The system has all the order history in it from the order being loaded up to the signed delivery stage. With this system, we can track the full movement of the order. It makes it easy to see what went wrong in between, as well.
	Procurement Specialist	Customer orders are accurately tracked, whether there is a delay or not.
	Sale Specialist	All stock manoeuvres are reported daily by the systems, and this help to check orders movement constantly.
	Sales Supervisor	N/A
<b>How effective is the EICS in correctly allocating items to an order?</b>	Branch & Operation Manager	The system does it automatically since all order details are already in the system.
	Warehouse Supervisor	The system works on a first-come, first-serve basis. Clearly, each order has a different unique number. So, the system allocates automatically stock to the first customer, and then to the second one until there is no excess.
	Procurement Specialist	As I said, both systems track and allocate orders items automatically and it is very effective. No omission at all.
	Sale Specialist	Orders are coded and effectively allocated.
	Sales Supervisor	Order allocation is automatically allocated based on stock code for the ordered items to fulfil the order

**Question Four: How does the use of EICS enable e-retailers to achieve competitiveness?**

According to the respondents, the most vital benefits achieved through the implementation of their customised EICS included reduction of overheads in terms of operations expenses such as packaging, courier, freights and also employees' overheads, faster customer service through a higher replenishment rate, and market prediction (customer demand). It also enabled them to have more control over inventory, to track people's activity in the warehouse and to speed up order turnaround time. With their EICS order processing time is more accurately and faster, both systems can predict the customer demand and have more control over stocks satisfying customer demand.

In terms of customer service, satisfaction and loyalty, respondents gave a high rating to the use of EICS in their company. They all remarked that EICS had improved customer service and delivery time frames. Their customers are satisfied with the system, as they are served faster and more accurately than previously. The company also boasts higher rates of customer loyalty because it can fulfil promises made to its customers more effectively. In conclusion, having a better customer service such as the ability to predict their customer demand and always having stock, have increased they business customer satisfaction and loyalty.

The respondents answered the following questions:

**Table 4.1: E-retail competitiveness through EICS**

<b>Sub-Questions</b>	<b>Respondents</b>	<b>Responses</b>
<b>What are the most important advantages that your organisation has been able to achieve from the implementation of the EICS?</b>	Branch & Operation Manager	So, a lot of companies take on these systems to reduce employees overhead, but we haven't, we have kept every single employee we have had. The EICS has made our operation faster. The main reason we took EICS on, it is to service our customer more quickly, to have a higher replenishment rate or fulfilment rate, and to



Sub-Questions	Respondents	Responses
		<p>reduce overheads in terms of operations expenses such as packaging, courier, freights, foreign currency, exchange.</p> <p>Besides, the order processing rate time is faster, and more accurately, we can predict the market and have more control over our stocks. There has been a lot of benefits on that side. It is costly to use the systems, but the cost is far outweighed by the benefits.</p>
	Warehouse Supervisor	<p>Since the implementation of the EICS, we can serve the customers a lot quicker. Definitely, the system is faster, more accurate, and we got fewer complaints. Besides, it helps to track people's behaviour activities in the warehouse itself as well. It shows which employees are slack, who's not slacking and who's actually performing. The benefit is a lot</p>
	Procurement Specialist	<p>Customer are serviced more faster, we have a higher replenishment rate / fulfilment rate, and overheads have reduced in terms of operations expenses such as packaging, courier, freights.</p>
	Sales Specialist	<p>order processing time is more accurately and faster, both systems can predict our customer demand and have more control over our stocks.</p>
	Sales Supervisor	<p>In terms of stock, it easier to manage our stock levels now than before. The second most important thing is our customer order turnaround time is quicker, meaning orders are much quicker fulfilled than previously. Also, our EICS automatically prioritises customer orders according to their urgency, customer location and delivery methods or collection.</p>

Sub-Questions	Respondents	Responses
		<p>The system prioritisation of order is one the most benefit of the implementation of the EICS. Also, with the EICS, we can do our stock prediction properly, and this has enabled us to have most of the stock all the time.</p>
<p><b>How would you rate the contribution of the EICS to the customer service, customer satisfaction and customer loyalty of your organisation?</b> <b>(1) High (2) Medium (3) Low? Why?</b></p>	<p>Branch &amp; Operation Manager</p>	<p>So, when we implemented the system, it was 6/10, we currently maybe at about 8/10 and we still focusing on certain aspects of the EICS. Again, the implementation has improved our customer service, our delivery time frame, our replenishment, and our fulfilment rate, and we will only be happier if we get to about 98 per cent (%). We still have quite a way to go, and there is a lot of development we need to do on the system. If I have a customer to rate us, I will hope that most of them will say 8/10 at the moment; and we are very proud of it.</p>
	<p>Warehouse Supervisor</p>	<p>Most of our customer are satisfied with the system since we can service them faster than previously. Based on it, we can say that customer satisfaction is definitely higher. Regarding customer loyalty, the nice thing about the system is if we make promises to the customers, 99% of the time we keep our promises, which makes our customer loyalty higher as well.</p>
	<p>Procurement Specialist</p>	<p>I would say our customer are much more pleased with our systems and online platform. These has helped with an increased number of customer demand. We can conclude that customer service, customer satisfaction and loyalty being higher.</p>

<b>Sub-Questions</b>	<b>Respondents</b>	<b>Responses</b>
	Sale Specialist	Having a better customer service such as the ability to predict our customer demand and always having stock, have increased our customer satisfaction and loyalty.
	Sales Supervisor	The EICS is very good to be honest because it services our customer more efficiently than before in such way if the customer places an order, automatically it notifies the customer via an email with a collection number. The delivery is executed based on the collection number. Also, because of the fact that the customer gets a notification when order is ready for collection, and a detailed report of the receiving order. Customers are much more satisfied, and all these facts have increased our customer loyalty. Last, being able to predict our stock accurately and always having stocks all the time, have made our customer satisfaction better that was before.

### 4.3. Summary of Findings

A summary of the findings has been developed after careful analysis of all the responses obtained from the interviews.

**Table 4.2: Summary of research findings**

<b>RESEARCH</b>	<b>FINDINGS</b>
EICS used for competitiveness	ERP (LOCAD, NetSuite) for managing and controlling inventory WAERlinx for warehouse management

E-retail inventory management through EICS	Overseeing inventory stock cycle transaction Performing a transparent inter-branch transfer Security control through a bar-code scanner Predicting customer demand and more accurate stock availability
E-retail order management through EICS	Automatic order processing transaction Automatically allocation of orders and fulfilment of any backorder s Faster customer demand execution Timely delivery based on customer location
E-retail competitiveness through EICS	Faster customer service Reduced operating overheads Customer demand/ market prediction-Quicker order turnaround period Better customer service, satisfaction, and loyalty Being able to predict our stock accurately and always having stocks all the time

#### 4.4. Summary

This chapter presented the findings from the data collected through semi-structured interviews within a selected e-retailer. The data was analysed, discussed, interpreted, and presented in tables. As empirical findings from a case study, the respondents' responses were summarised question-by-question in an orderly manner. The next chapter provides a conclusion to the study, assesses its contribution, and makes recommendations for practice and for further research.

## **CHAPTER 5: CONCLUSION AND RECOMMENDATIONS**

### **5.1. Introduction**

This study investigated the role of the EICS in the competitiveness of e-retailers using a selected e-retailer in South Africa as a case study. The previous chapter presented the research findings as stemming from analysis of the data collected from the semi-structured interviews with the selected e-retailer. The findings of the study were discussed, interpreted and presented in tables.

This study sought to explore the contribution to competitiveness of an electronic inventory control system (EICS) for an e-retailer. Its main objective was to determine how EICS improved the competitiveness of e-retailer. It emerged from the selected case study that the competency afforded by an EICS significantly improved the efficiency and effectiveness of an e-retailer. This enhancement derived from the expertise, modules implemented, and the IT tools associated with the EICS. It is therefore arguable that through the inventory control competency of EICS, e-retailer can achieve their inventory control performance objectives.

This chapter revisits the research objectives, provides a brief overview of the research, research contribution, and sets out the overall conclusion with relevant recommendations. Finally, limitations are highlighted, and suggestions for possible further research are made.

### **5.2 Research Objectives revisited**

#### **5.2.1 EICS use by e-retailer to be competitive**

The conceptual framework proposed that EICS influences the competitiveness of e-retailers. EICS technology emerged as a significant contributing factor to the competitiveness of the e-retailer by optimising and automating e-retailer inventory management and order management processes and enforcing inventory and order policies.

Further, the findings revealed that ERP (LOCAD, NetSuite) and a warehouse management system (WAERlinx) were the two EICS used by the selected e-retailer. The e-retailer is currently the only e-retailer in South Africa using WAERlinx and NetSuite, and this is a major

advantage gained from the adoption of the EICS. Usage of the two systems has conferred on the selected e-retailer other benefits such as reduced risk related to their operating costs, and quicker and more accurate operating practices, especially in terms of inventory counting. The e-retailer can perform an inventory stock count and at the same time continue to operate effectively. Lastly, the transparency of the EICS allows employees to access exact, correct inventory stock level information at any given time, in any branch.

### **5.2.2. The use of EICS in improving e-retailer inventory management**

The findings revealed that customisation of the EICS has allowed the selected e-retailer to oversee inventory stock cycle transactions and perform inter-branch transfers in transparent ways. Inventory allocation occurs automatically and accurately. Likewise, the use of the EICS has improved the firm's inventory management by minimising problems relating to procurement. Moreover, the EICS helps in planning and forecasting the stock replenishment of the selected e-retailer based on the quarterly movement of stock. This has almost eliminated stock-out occurrences, speeded up the returned stock process, and reduced inventory discrepancy.

### **5.2.3. The use of EICS in improving e-retailer order management**

From the empirical findings of this study, it emerges that with the EICS, customer orders are automatically processed according to what the system reports. At the same time, the EICS automatically allocates stock to orders and fulfils any backorders. EICS has improved the e-retailer's order management in executing customer demand faster as well as reducing order delivery time. At the same time, the EICS has empowered the e-retailer to track the full movement of the order through the system.

### **5.2.4. The use of EICS in achieving e-retailers' competitiveness**

The empirical findings revealed that the essential benefits achieved through implementing EICS included reduced operations' overheads, faster customer service in having higher replenishment rate, and market (customer demand) prediction. Moreover, the organisation has more control over inventory, being able to track people's behaviour in the warehouse, and achieve a quicker order turnaround time.

In terms of customer service, satisfaction and loyalty, the findings highly rate the use of EICS in the selected e-retailer. The findings show that EICS has improved customer service and shortened the delivery time frame. Most customers are well satisfied with the system, due to the fact that they are served faster than previously. On the whole, because of the advantages accruing through implementation of the systems, the e-retailer can fulfil promises made to its customers effectively and hence achieve high customer loyalty rates. Thus, the e-retailer adopting EICS has greatly improved customer service, satisfaction, and loyalty and hence its competitiveness.

### **5.3. Overview of the research**

The rationale for this research study came from the ongoing concern that despite advances in technology, some e-retailers are still struggling to take advantage of the capabilities of new technologies, technological skills and supply chain management policies to improve their inventory control performance (Patil & Rajiv, 2014). With increasing use of the internet and more customers being drawn to online shopping, this concern constitutes the rationale for the study.

**Chapter 1** introduced the study by describing the background and formulating its problem statement. The research aims and objectives were outlined and the research questions that guided this research were introduced. Also adumbrated were the research methodology, the scope of the research and an overview of the research project. The procedures followed to guarantee the ethical soundness of the research were described. The study was conducted at a selected e-retailer, and interviewees chosen according to their functions in respect of inventory and EICS. The study focused on how EICS benefits e-retailers in achieving and sustaining competitiveness.

**Chapter 2** reviewed relevant existing literature to establish whether an EICS had any effect in the competitiveness of e-retailers, in terms of elements such as customer service, customer satisfaction and loyalty. The chapter began with an overview of e-retailing and outlined the profile of the South Africa e-retail sector. It then surveyed prior research on e-retailer inventory control systems, EICS, e-retailer order management, and e-retailer competitiveness. The chapter concluded with a summary of its contents.

**Chapter 3** discussed the research methodology, approach and design selected for this study. It introduced the selected e-retailer as the site for the case study research. It then discussed the target population of the study, sampling technique, sampling size, methods of data collection, methods of data analysis, reliability, validity, and ethical considerations. The main data collection tool employed was a series of face-to-face, semi-structured interviews. The face-to-face interviews enabled the researcher to elicit the responses of employees dealing with inventory and EICS. Finally, there was discussion of the data analysis procedures used for Chapter Four.

**Chapter 4** presented analysis and interpretation of the data collected through face-to-face semi-structured interviews at the selected e-retailer. The findings of the study were discussed, interpreted and presented in tables. The chapter also re-presented the general framework developed to help e-retailers to achieve competitiveness within the e-retail sector.

**Chapter 5** concludes the dissertation and summarises its findings. Its research contribution is described, and recommendations for practice and future research are made.

## **5.4. Research Contribution**

The study contributes on two levels, practical and the methodological.

### **5.4.1. The Practical Contribution**

Technology is continually changing, and technological change brings change also to business operations. Given the increased use of the internet and online shopping, e-retail is expanding and there is a growing demand for e-retailers with more competent EICS to achieve and sustain their competitiveness. The outcomes of this study can contribute to the competitiveness and overall performance of existing and prospective e-retailers' operations. Improved understanding of the phenomenon under study can help e-retailers develop better inventory strategies and policies, and the general framework proposed above (and reproduced below) can assist firms with the adoption and implementation of EICS. As shown, the study also contributes to the literature addressing the complexity of adopting EICS in e-retailing to achieve competitiveness.



## **5.4.2. The Methodological Contribution**

This study used an interpretative case study approach and applied qualitative research methods. The study gathered data from semi-structured interviews at a selected e-retailer. The interviews were one-on-one discussions held to gain in-depth information on the phenomenon under study. The approach conducted to a better understanding of the role of EICS in the competitiveness of e-retailers. More specifically, the study revealed how the managerial level of personnel at the e-retailer perceived the phenomenon under study in their own environment. These findings remain context-specific and, although they led to the formulation of a framework of guidelines, are not necessarily generalisable.

Furthermore, the contribution of this study is associated with its design as a qualitative study, that reports and analyses the personal experience of the participants. The outcome of the inductive reasoning is the provision for inventory control systems decision-makers of an EICS framework developed on the basis of the understandings and views of EICS users. The research outcome is therefore grounded in real-world experience.

## **5.5. Conclusion and Recommendation**

### **5.5.1. Conclusion on findings**

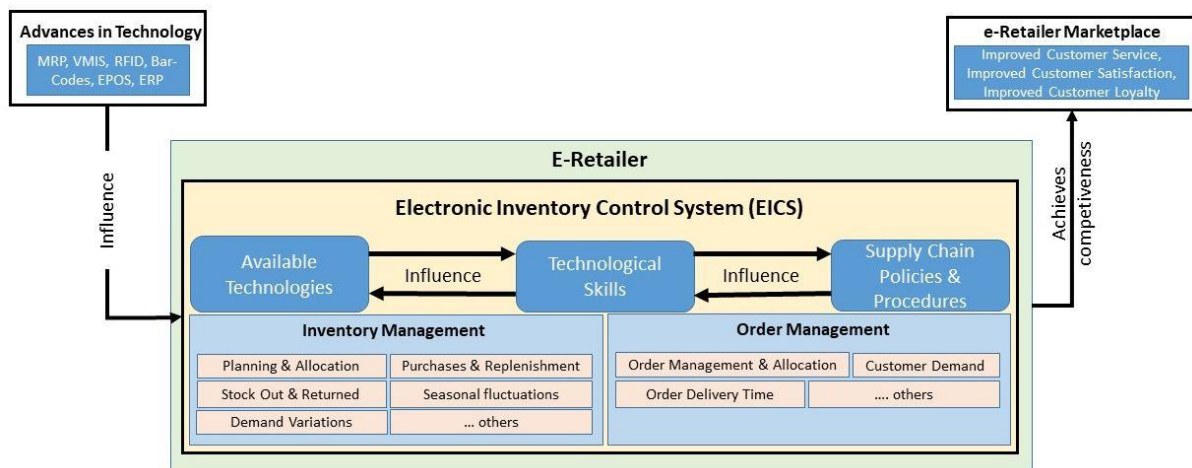
The overall findings of this study lead to the conclusion that EICS technology is a vital component in the performance of e-retailers necessary for them to be competitive in the market. The EICS inventory control competency empowers e-retailers to achieve their inventory objectives. In the e-retailing sector, e-retailers such as the selected e-retailer for this study benefit from the up-to-date technology, inventory control competency and expertise associated with EICS. The benefits include eliminating inventory shortage, improving inventory replenishment efficiency, enhancing inventory turnover, and maximising customer service, satisfaction, and loyalty. These benefits help to reduce risks relating to operating costs. Designing the right system to meet the business's needs, changing from the previous system to the new EICS, and the customisation of the new system, were the main challenges faced during the adoption of the technology.

In summary, the utilisation of customised EICS improves the competency of inventory control performance to help e-retailers achieve competitiveness. On the basis of the findings of this study, the following recommendations are made as a framework for adopting EICS to improve inventory control performance in e-retailers and help them achieve competitiveness.

### 5.5.2. Recommendations

The study recommends a general framework, based on the conceptual framework used to collect and analyse data, to assist e-retailers to embrace appropriate EICS technologies as part of their core inventory control strategy.

This framework is presented in Figure 5.1, below.



**Figure 5.1: A proposed general e-retailer competitiveness framework**

From the research findings, in addition to the concluding remarks, the following recommendations are made to enhance the competency of EICS in driving inventory control performance to achieve competitiveness in the e-retailing sector.

1. A clear definition of the challenge inventory control problems and breaking down these problems into objectives plan are needed before the adoption of EICS as a means to improve the competency of inventory control performance in e-retailers.

2. E-retailers are required to manage the adoption of EICS as a process, a process developed in a sequence that moves from the definition of objectives to the evaluation of defined objectives as follows:

- i. Identification of need or problem and setting the precise objectives of the inventory control performance on EICS competency.
- ii. Choosing relevant EICS based on the objectives.
- iii. Evaluating the EICS competency based on the objectives.

3. The choice of the EICS should be carried out objectively from the perspective of the required solution to the identified inventory control problem, and not from the perception of what capabilities are offered by the EICS. Thus, the choice of the EICS will be based on:

- i. The IT processing capability of EICS.
- ii. The inventory control competence of EICS.
- iii. The inventory control expertise of EICS.
- iv. The performance competency of EICS in the e-retailing industry.
- v. The inter-branch competence of EICS.

4. E-retailers are required to clearly define the attributes and metrics of their inventory control performance in line with inventory control objectives as the EICS competitiveness framework. Preferably, the competitiveness of their inventory control performance through EICS should be measured according to:

- b. The reliability, responsiveness, and agility of EICS in the inventory control and order management processes, to serve customers effectively.
- c. The volume of operating overhead costs to achieve competitiveness based on customer service, customer satisfaction and customer loyalty.

## **5.6. Limitations and suggestions for further research**

Even though a useful contribution is made by this study, the study was inevitably limited in scope. Due to limitations such as access to data, financial and material constraints, and others (such as the scant existing research on EICS for e-retailers) the study is not as authoritative as it might have been.

The study was restricted to a selected e-retailer in South Africa and focused on managerial personnel in various departments: inventory control management, sales order management, and customer service. In addition to that, only qualitative data was analysed. Extending this research study to other regions and industries or expanding the sample size with quantitative analysis using statistical tools, would enhance the reliability and validity of the findings, and lead to a stronger end-result.

Furthermore, this study leaves some areas open for further research. Any further research on this topic will help e-retailers to understand the role of EICS in e-retailing as a source of competitiveness. Possible topics for further study:

- a) The role of EICS on the financial performance of e-retailing. For instance, the study might investigate the relationship between EICS, operating costs and revenues.
- b) The role of EICS on the inter-warehouse process of retailing. The study of this second topic should attempt to explain the perspective on using EICS for successful inter-branch applications of EICS.

## **5.7. Summary**

In summary, this study has five major components:

- (a) The rationale of the research study, which detailed the research problem, the research objectives and research questions, leading to the achievement of the objectives.

- (b) The review of relevant literature, in particular on EICS, inventory control systems, order management and competitiveness in e-retailing. This highlighted the role of EICS in business organisations, with a particular focus on e-retailers.
- (c) The research itself, which assumed a qualitative approach and case study design. Data was collected through semi-structured interviews with three members of staff from the selected e-retailer.
- (d) The data were discussed and analysed using a grounded-theory technique to transform the empirical data into useful information, which was set out in table form.
- (e) It emerged from the study that the major competencies of the EICS consisted of stock cycle and inter-branch transfer transparency, effective security control, automated inventory transactions, faster customer service, and market prediction capacity. These competencies drive positive implications for e-retailer competitiveness.

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# APPENDICES

## Appendix A: CPUT Ethics Approval Certificate



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P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 4603291 • Email: fbmsethics@cput.ac.za  
Symphony Road Bellville 7535

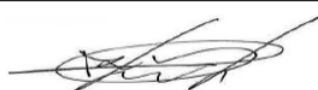
Office of the Chairperson Research Ethics Committee	Faculty: <b>BUSINESS AND MANAGEMENT SCIENCES</b>
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At a meeting of the Faculty's Research Ethics Committee on **2 May 2018**, Ethics Approval was granted to **Sandra Ngolu Mondo (211248606)** for research activities of **MTech: Business Administration** at the University of the Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	THE ROLE OF THE ELECTRONIC INVENTORY CONTROL SYSTEM ON THE COMPETITIVENESS OF E-RETAILERS IN SOUTH AFRICA  Lead Researcher/Supervisor: Dr. M Twum-Darko/J Ansen
---------------------------------------	---

Comments:

Decision: **APPROVED**

 Signed: Chairperson: Research Ethics Committee	16 May 2018 Date
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## Appendix B: Interview Covering Letter



Postgraduate studies and research  
Graduate School of Business Management  
Business & Management Sciences Faculty  
Keizersgracht and Tennant Street  
Zonnebloem | 8000 | Cape Town

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To whom it may concern

Re: Introductory letter for the collection of research data

**Sandra Ngolu Mondo** is registered for the MTech: Business Administration degree at CPU with student number **211248606**. The thesis is titled "**the role of the electronic inventory control system on the competitiveness of e-retailers in South Africa.**", and aims to explore the role of the electronic inventory control system on the competitiveness of e-retailers. The main supervisor for this research is Dr M Twum-Darko.

In order to meet the requirements of the University's Higher Degrees Committee (HDC) the student must get consent to collect data from organizations which they have identified as potential sources of data. In this case the student will issue a questionnaire to gather relevant data.

If you agree to this, you are requested to complete the attached form (an electronic version will be made available to you if you so desire) and print it on your organisation's letterhead.

For further clarification on this matter please contact either the supervisor(s) identified above, or the Departmental Research Committee Secretary at 021 460 3833.

Regards

A handwritten signature in black ink, appearing to read "Michael Twum-Darko".

**Dr. Michael Twum-Darko**

Postgraduate Studies and Research  
Graduate Centre for Management  
Faculty of Business and Management Sciences

*Date: 20 February 2018*



## Appendix C: Research Consent Letter



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I Makhetha Makhetha, in my capacity as Operations manager at Electomechanica give consent in principle to allow Sandra Ngolu Mondo, a student at the Cape Peninsula University of Technology (CPUT), to collect data in this company as part of his/her Master of Technology research. The student has explained to me the nature of his/her research and the nature of the data to be collected.

This consent in no way commits any individual staff member to participate in the research, and it is expected that the student will get explicit consent from any participants. I reserve the right to withdraw this permission at some future time.

In addition, the company's name may or may not be used as indicated below. (Tick as appropriate).

	Thesis	Conference paper	Journal article	Research poster
Yes	x	x	x	x
No				

Makhetha Makhetha

16 April 2018

## **Appendix D: Research Interview Guide**

### **Consent for Participation in an Interview**

23 July 2019

Dear Participant,

Participation request in an interview

The main research objective is to investigate the role of an electronic inventory control system in the competitiveness of e-retailers.

Your participation is highly valued and appreciated to gain insight into the challenges facing the e-retailers with regards to their inventory control system.

Participation in this study is voluntary, should you wish to withdraw for any reasons at any time, you are welcome to do so without any objection to your decision. Your information provided in this interview is confidential and shall be treated as such.

Thank you for participation. For more information or queries, please feel free to contact the researcher on details below.

Sandra Ngolu Mondo

[Mondorosette@gmail.com](mailto:Mondorosette@gmail.com)

0729461173

## Interview Questions

<b>Research Questions</b>	<b>Interview guide questions</b>
<p style="text-align: center;"><b><u>Main Research Question</u></b></p> <p>How can the electronic inventory control system (EICS) benefit e-retailers towards meeting and sustaining its business competitiveness?</p>	
<p style="text-align: center;"><b><u>Sub-research question 1</u></b></p> <p>What EICS does an e-retailer use to be competitive?</p>	<p>Which EICS do you use in your organization?</p> <p>What are the modules/ implementations areas of the chosen EICS?</p> <p>How did you evaluate the EICS before you adopted it?</p> <p>How has the EICS given the organization a competitive advantage?</p> <p>What challenge (s) did you face when adopting the EICS?</p>

<p style="text-align: center;"><b><u>Sub-research question 2</u></b></p> <p>How does the use of the EICS help the e-retailer to improve e-Retail inventory management?</p>	<p>How does the use of EICS enable you to manage inventory allocation?</p> <p>How does the use of EICS help you manage your stock in term of the inventory planning, Purchasing and replenishment?</p> <p>How does the use of EICS help you manage your stock in term of the demand variations, seasonal fluctuations, stock out and returned stock?</p> <p>How does the use of EICS assist you in the security control of the stock management?</p>
<p style="text-align: center;"><b><u>Sub-research question 3</u></b></p> <p>How does the use of the EICS help the e-retailer to improve e-retail order management?</p>	<p>How does the use of EICS enable you to control your order management?</p> <p>How does the use of EICS enable you to execute customer demand?</p> <p>How does the use of EICS contribute to the order delivery time?</p> <p>How does the use of EICS contribute on accurately tracking customers' orders?</p> <p>How effective is the EICS in allocating correct item to order?</p>

<p style="text-align: center;"><b><u>Sub-research question 4</u></b></p> <p>How does the use of the EICS help the e-retailer to achieve competitiveness?</p>	<p>What are the important benefits that your organization has been able to achieve in the implementation of the EICS?</p> <p>How would you rate the contribution of the EICS to the customer service, customer satisfaction and customer loyalty of your organization?</p> <p>(1) High (2) Medium (3) Low? Why?</p>
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## Appendix E: Letter from the Grammarian

### Epsilon Editing

314 Grosvenor Square  
21 College Road  
Rondebosch  
7700

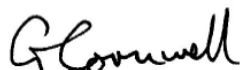
[dgncornwell@gmail.com](mailto:dgncornwell@gmail.com)

tel. 084-9897977

11 June 2020

TO WHOM IT MAY CONCERN

This serves to confirm that the dissertation by Sandra Ngolu Mondo, "The impact of electronic inventory control systems on the competitiveness of e-retailers in South Africa," has been proofread and edited to my satisfaction for English idiom and correctness of expression. The referencing has been checked against the CPUT Harvard standard.



Professor D G N Cornwell (PhD)