THE IMPACT OF E-PROCUREMENT ON SUPPLY CHAIN PROCESSES A CASE STUDY OF KAKIRA SUGER WORKS COMPANY (UGANDA)

BY

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DECLARATION

I, **BRITISH PAUL**, hereby declare that this report is my original work as a result of my own efforts and has never been submitted before to any other university or institution of higher learning for award of a Degree.

Signature ....

Date ......21/07/2016....

APPROVAL

This is to certify that this research Report has been done under my supervision and submitted to the college of Economics and Management, Kampala International University, in partial fulfilment of the requirements for the award of a Bachelor's degree in Supplies and Procurement with my approval as the candidate's university supervisor.

Mr. RICHARD MASABA

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Date.................21/07/2016

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

A supply chain can be defined as three or more organizations directly linked by one or more of the flows of products, services, finances, and information from a source to a customer (Mentzer *et al.*, 2001). Management of the supply chain is essentially management of the relationships and activities among the member organizations. These relationships range from single transactions to complex interdependent relationships. As the business environment becomes more complex, organizations recognize that many benefits can be obtained from closer, long-term relationships (Ganesan, 1994). Day (2000) ventures to say that committed relationships are among the most durable of advantages because of their inherent barriers to competition. The goal of supply chain management is for member organizations to work together in close, long-term relationships to increase the competitive advantage of the supply chain as a whole (Mentzer *et al.*, 2001).

The phenomenon referred to as ``the next business revolution'' – the nexus of computers, networks, people, and business goals for purposes of selling goods, services, and information is an innovative way to cut costs, grow markets and profitability, and improve shareholder return relative to traditional business methods (Palmisano, 1998). This combination is the business phenomenon referred to as e-procurement: the trade of goods and services that takes place electronically such as over the Internet (Dolber *et al.*, 1998). The ratio of online business trade to traditional channels is projected to vary greatly by industry, from a high of over 20 percent for computing to just over 1 percent for industrial equipment (Goldman-Sachs & Company, 1999). While the downturn in e-procurement stock valuations in 2000 resulted in the failure of many e-procurement ventures, the growth in B2B e-procurement is still on track. In 2000, the value of worldwide B2B Internet commerce sales transactions surpassed $433 billion, a 189 percent increase over 1999 sales transactions (Pastore, 2001). The emergence of business on the Internet brings a new set of challenges to coordinating supply chain activities. Firms conducting business electronically face several differences in the e-procurement business environment that may have a significant impact on managing relationships in the supply chain. Challenges that are frequently mentioned in both the

popular press and academic literature are the speed of business and the level of connectivity among supply chain organizations.

These differences can lead to higher levels of uncertainty and changes in the traditional structures of supply chains, which can influence the success of supply chain relationship management.

Because this phenomenon is so new, little research has addressed the impact of e-procurement on relationship management. As companies attempt to achieve success in managing relationships within their supply chains, the e-procurement environment presents organizations with new dynamics to manage. We conducted a qualitative research study to determine how e-procurement companies perceive the new environment and to explore how they are managing relationships in their supply chains under these new conditions. The purpose of this paper is to build a grounded theory of the impact of e-procurement on relationship management in the supply chain using the study findings, supported by existing research in e-procurement and relationship management.

1.1 Background of the Study

Kakira Sugar Company is a sugar manufacturing company in Uganda. This company majors in the production of sugar and its bi-product molasses. It also prepares manure from the sugar peels wastes. These products are then sold to the country's consumers. This company has various departments, i.e. marketing, finance and accounting, sales, maintenance and repairs, engineering, procurement and others. The subject of this study is the company's procurement department which carries out all the purchasing functions of the company both nationally and internationally, including disposal functions.

Objectives of the Company's procurement department:
- To minimize obsolete and surplus stores within the Supplies Department.
- To reduce costs associated with procuring of Goods and Services.
- Transform Procurement Department from cost centre to Profit Centre.
- To reduce lead time of procuring goods from current 8 weeks to 4 weeks

Mission of the department:
- Regularly identify stores that need to be disposed.
- Value them and dispose.

Computerize internal and external Procurement processes of Sony Sugar Company.

- Automate inventories management.
- Review current bid documents and procedures to enhance efficiency.
- All user departments to provide their annual requirements.
- Develop Sony Sugar Procurement Manual and communicate to all.
- Re-design stores
- Regular market survey for goods and services.
- Suppliers' appraisal and evaluation.
- Strategic partnership with key suppliers.
- Use contracting and consolidation of procurement approach.
- Involve end users in adopting required procedures and processes
- Carry out market survey on National and International Standards.

Brief Description of Department's Function

The department has the key responsibility of providing goods and services continuously as need arise without any disruption to the company operations. This is achieved through close liaise between stores and purchasing divisions by:

- Providing adequate inventory data for stocks,
- Utilizing inventory data for proactive requisitioning of requirements,
- Developing and effecting a procurement plan for prudent procurement,
- Utilization of modern supply chain technique in managing company stocks and supporting the business.

  The warehouse is part of the department and a store manages and distributes the end product to the external and internal customers in an efficient manner.
- Based on the vision and mission of the department the service provided can only get better through improved system

Departmental Structure

- Stores Division
- Warehouse Division
- Purchasing Division

The following section describes the existing literature review that will be used for the grounded theory study. The researcher will then present the analysis of data collected from informant employees and from existing literature. The researcher will then offer implications

of this study for both practitioners and researchers based on the findings. Finally, limitations and opportunities for future research are presented.

Since procurement is a very important element in the supply chain of Sony Sugar Company, in order to understand the concept in more detail, this study is using these factors as constructs to study the effects of e-procurement factors on supply chain performance and aims to discuss the relationship between e-procurement and supply chain performance as well as to investigate the essential roles of partner relationship, information sharing, and supply chain integration plays in this system.

1.2 Statement of the Problem

With the growing modernity, dynamism and global village, the introduction of electronic procurement has greatly simplified and made the business purchasing operation easy and real. By accommodating e-procurement in an organization, business, enterprise can automate their entire process especially purchasing that is costly, risky and purchasing that calls for much time. Kakira Sugar Works has tried to integrate E-procurement in its transactions. However the significance of e-procurement has not yielded much towards the overall organisation's performance and its upon this ground that this study is undertaken to establish how electronic procurement relates to the organisational performance in Kakira Sugar Works.

1.3 Purpose of the Study

The Internet era has revolutionized not only the way we conduct business but also the methods adopted with the management of the supply chain, such as the way businesses communicate with each other and how each member in the supply chain is impacted. The purpose of the study is to analyze how E-procurement has influenced the supply chain management with reference to its past trends, present operations and future techniques.

1.4 Objectives of the Study

The objectives of this study are as follows:
(1) To understand E-procurement and its many facets.
(2) To determine the benefits of using E-procurement on the Supply Chain Management.
(3) To identify the problems of using E-procurement systems on supply chain.

1.5 Research Questions

Questions that would satisfy the research objectives are

(1) How can we understand E-procurement and its many facets?

(2) What are the benefits of using E-procurement on the Supply Chain Management?

(3) What are the problems of using E-procurement systems on supply chain?

1.6 Significance of Study

The rise of the Internet, and attendant information technologies and their application to procurement, has engendered a great deal of hype. Commentators have, among other things, heralded the arrival of a new economy and foretold the total transformation of the way people conduct business through online shopping. It has also completely altered in the methods used in the demand and supply chain process. E-procurement has focused on new information products and networks. E-procurement has emphasized the cost saving significance of the Internet and the attendant technologies when doing procurement, this affects the costs of transactions, internal management, and purchasing of products. Reactions to the opportunities and challenges of the Internet have embraced every detail of the business environment.

The significance of this study can also be categorised as follows:

a) To Kampala International University

The report of this study could be used by the university's lecturers to educate future students on the application of Electronic procurement in the Supply Chain Management. Students of the university could use it as a reference material in the school library.

b) To the Researcher

After the study, the researcher shall be able to use the results of the study to write a report on the impact of E-procurement on Supply Chain processes. Both the proposal and the report shall form the researcher's dissertation which is a mandatory requirement for him to graduate with a bachelor's degree in the university.

c) To Future Researchers

May it be a group or individual, future researchers on a similar topic could use this study as a reference material in their work so as to shed more light with regards to understanding the exact impact of E-procurement on Supply Chain Processes.

d) To Kakira Sugar Works

The company would be able to use this report to assess how much E-procurement has impacted on its Supply chain processes and identify some of the difficulty they face in trying to implement E-procurement applications and some of the possible solutions to the problems they encounter in the process.

1.7 Scope of the Study

The E-procurement Strategies in this study relate to the relationships, processes and procedures between Kakira Sugar Works and its suppliers and contractors. E-procurement in this context does not include consumer type relationship between the factory and its employees, nor does it relate to the payment of rates, taxes, fines etc. Employees from mainly the company's procurement department i.e. head office, the main store of the factory and the sugar warehouse will be interviewed.

1.8 Conceptual Frameworks

Independent variable	Dependent variable

E-Procurement

- Electronic information system
- Catalogue
- Tendering system
- Evaluation of bidders
- E-contract/ orders
- Expediting
- Documentation of receipts
- E-payments
- E-ordering

Supply Chain Management

- Quality goods
- Timelines
- Customer relations
- Information links
- **Sourcing Methods**
  - Open Tender
  - Request for quotation
  - Single sourcing
  - Tracking/transport
  - Documenting
  - Price/cost

Intervening variables

-Funds available

-Technological advance

-Information sharing

-Transport network

-Management positive altitude

-Good management system (staff)

-Team work

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A number of the topics presented in this chapter relate to one or more of supply chain management definitions and E-procurement concepts. The content of this chapter will aid in the understanding and the implementation of several of these supply chain management principles in the E-procurement concept. This paper explores the effects of E-procurement relationships have on each of the Procurement transaction phases using a field study of Kakira Sugar Works. The next section presents the theoretical foundation for the study. This is followed by an examination of the research methodology utilised. The findings reveal that E-procurement relationships have most effect on the sourcing, fulfilment, and consumption phases of the procurement cycle.

2.1 Supply Chain

As defined by Turban supply chain is the flow of materials, information, money and services from raw material suppliers through factories and warehouses to the end customers. E-supply chain refers to a supply chain that is managed electronically, usually with Web technologies. A *Supply Chain* encompasses all activities in fulfilling customer demands and requests. These activities are associated with the flow and transformation of goods from the raw materials stage, through to the end user, as well as the associated information and funds flows. There are four stages in a supply chain: the supply network, the internal supply chain (which are manufacturing plants), distribution systems, and the end users. Moving up and down the stages are the four flows: material flow, service flow, information flow and funds flow. E-procurement links the supply network and manufacturing plant, e-distribution links the manufacturing plant and the distribution network, and e-procurement links the distribution network and the end users.

Supply Chain Management is a set of synchronized decisions and activities utilized to efficiently integrate suppliers, manufacturers, warehouses, transporters, retailers, and customers so that the right product or service is distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying

customer service level requirements. The objective of Supply Chain Management (SCM) is to achieve sustainable competitive advantage.

The *internal supply chain* of the focal manufacturing company includes sourcing, production, and distribution. **Sourcing** or purchasing of the company is responsible for selecting suppliers, negotiating contracts, formulating purchasing process, and processing order. **Production** is responsible for transforming raw materials, parts or components to a product. **Distribution** is responsible for managing the flow of material and finished goods inventory from the manufacturer to customer. Enterprise Resource Planning systems (ERP) integrate the entire company's information system, process and store data, cut across functional areas, business units, and product lines to assist managers make business decisions. As an IT infrastructure, ERP influences the way companies manage their daily operations and facilitates the flow of information among all supply chain processes of a firm.

Supply Chain management is therefore the process of managing the movement of goods from suppliers to buyers. Supply Chain Management (SCM), also known as supply chain integration or supply chain optimization, is the process of optimizing a company's internal practices in interacting with suppliers and customers in order to bring products to market more efficiently. SCM functions encompass demand forecasting, sourcing and procurement, inventory and warehouse management, distribution logistics, and other disciplines. The SCM procedure repeatedly succeeds where Enterprise Resource Planning (ERP) fails. In order to correctly forecast inventory levels, the supply chain management system needs ERP's database cooperation (Laudon & Laudon, 2002). A powerful SCM includes the systematization and optimization of needs to know from its suppliers the timeline for putting the materials on the production line. On the other hand, the production time-line relates to the products' shipment date. Then those solutions extend to the customers and customers' customers and complete the business.

2.2 UNDERSTANDING OF THE CONCEPT OF E-PROCUREMENT

Definition of e-procurement

E-procurement simply defined is any method of using electronic communications and computer technology to conduct business, but the most eye-catching developments of e-procurement are related to the internet. Ten years ago the internet world-wide had fewer than 3 million users and it had no applications involving e-procurement. By 1999, its usage had increased over 80-fold and around a quarter of these users were purchasing on-line to a value

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of around US$110 billion. If this expected rapid growth continues by 2005, e-procurement transactions between businesses and from businesses to consumers will represent 5% of the transactions in each of the two sectors. These sectors constitute the key areas of development and progress. Overall the global internet economy could soon be worth about 5% of the world's GDP. This phenomenal growth of the World Wide Web has enabled it to be used both as a trading platform and as a supply chain management (SCM) concept. The nature of the trading platform may simply represent an advertisement facility or, at the other extreme, be an interactive site through which consumers can shop or bid at auctions at a global level, resulting in close interaction of supply and demand. It is this trading platform usage that is usually referred to as e-procurement but the impact on SCM is also important, especially when considering its implications for transport.

Features of e-procurement
The development of e-procurement has several features.
(1) Involvement of small companies
E-procurement enables small companies to be involved in electronic transactions,this for example can be money transactions that most small operating business use and thereby operate in a world-wide market.
The concept of electronic business transaction itself is at least 20 years old. Electronic data interchange.

(EDI) technology allowed large companies that could afford the investment in hardware and specific software to send messages to each other for placing orders and managing deliveries. Stock inventories could be cut significantly and Just-in-Time (JIT) ordering systems saved large sums on the cost of holding product components. For example, in the automotive industry EDI was extended across the entire supply chain to allow dealers to place orders directly with distributors who in turn ordered from manufacturers who in turn ordered from component suppliers. However, smaller businesses had little involvement in this as they did not have the volumes of transactions to justify the investment. In addition, the lack of standards in procedures, each one being specific to a particular system, meant that the cost of customisation for EDI business was prohibitive for a small company.
The internet has changed this completely. With web browsers, there are now common standards for communication and widespread availability of client access software. This

enables small businesses to operate in a world market. There are numerous examples of growing successes in the small business sector.

(2) Closer inter-relationship within the supply chain

The open structure and low usage costs for the internet constantly stimulate both new and existing information and communication technologies (ICT), thereby making it more and more possible for buyers and sellers to come together efficiently. The result is the creation of new marketplaces and opportunities which themselves cause changes in product and service customisation, search and location, distribution, and consumption

E-procurement is often seen in terms of online purchasing or business to consumer procuring, though this activity is fairly small compared to business to business procuring. In 1998 for example, the former was worth perhaps 8 billion US$ and the latter 43 billion US$; predictions for 2003 are of the order of 108billion US$ and 1.3trillion US$, respectively. Although some Business to business growth is due to the transfer of supply chain management (SCM) systems from the old EDI networks to the internet, it is also driven by the recognition by businesses that they can share information and work collaboratively with other businesses, and deal directly with suppliers, thereby not only reducing inventory costs in the process but promoting a more effective customer service as well.

Sophisticated Business to business systems encompasses the entire supply chain by working with customers, manufacturers and suppliers.

Related developments can also be seen in new businesses with new products and services that have emerged as a result of an e-procurement approach. Whether in Business to business or Business to consumer's scenarios, this form of supply depends on improved information and understanding of consumer or business user requirements, and provision is moving from simply supplying a product more efficiently to tailoring an entire service that matches particular user requirements. The ever-closer provision of service and product requirements or their combination to meet particular needs of the user or consumer will be an increasing feature of e procurement supply. The e-procurement process can eliminate the usual industry practice of over-estimating materials that then get wasted. With e-procurement, what is ordered is used, and when there is a gap, it can be filled readily by electronic ordering combined with JIT delivery. This could lead to environmental benefits.

(3) Developing a global market

The third feature is the global aspect of e-procurement. E-procurement operates beyond national borders, and thereby brings together supply and demand at a global level. This feature may lead to changes in the structure of supply chains as global sourcing increases. In terms of business procurement, trading can be done with the best possible supplier, whatever their location, and the time needed to negotiate is reduced as a result of online transmission of documents and other communications. Therefore, it could be said that the development of ICT has enormous effect on conventional systems and, furthermore, to national competitiveness. Developing countries such as China and India and emerging markets in Asia are starting to use e-procurement techniques to improve footholds in world markets.

Long-term business relations between companies have therefore become threatened and the procurement market has been thrown open to all suppliers. This has had employment implications for production workers, office staff and middle management – further accentuated by greater opportunities for outsourcing by firms even of administrative functions such as personnel and finance, which are becoming increasingly practicable through the use of ICT. Companies can offer and operate business services in a way comparable to them being an internal unit within the purchasing company itself. Such impacts are at present unevenly distributed, being seen as relatively commonplace in the USA and less well-developed for example in Japan where a more fraternalistic business model is the cultural norm.

E-procurement uses advanced technology to assist business transactions in a web-based environment and facilitates the transaction of information flow and fund flow. E-procurement involves business-to-business transaction such as Covisint, business-to-customer transaction such as Amazon.com, customer-to-business transaction such as priceline.com, and customer-to-customer transaction such as e-Bay auction. E-procurement is conducted via a variety of electronic media. These electronic media include electronic data interchange (EDI); electronic funds transfer (EFT), bar codes, fax, automated voice mail, CD-ROM catalogs and a variety of others.

E-distribution instructs where to locate the sources of supply and advises how to access them, as well as how to move the materials to the retailers via the Internet or a web-based environment.

Now we have characterized the nature of supply chain management, we are ready to make a few relevant points:

1. The role of supply chain management is to produce products that conform to customer requirements.

2. The objective of supply chain management is to be efficient and cost-effective through collaborative efforts across the entire system.

3. The scope of supply chain management encompasses the firm's activities from the strategic level through the tactical and operational levels since it takes into account the efficient integration of suppliers, manufacturers, wholesalers, retailers, and end users.

Classifying E-procurement

There are several types of business methods in today's e-business scopes, such as "Business-to Consumer , Business-to-Business, Consumer-to- Consumer , Peer-to-Peer and Mobile, " (Laudon & Traver, 2001, p.13).

a) Business to Consumer

This model can be easily seen from many web sites because it sells the products, information and service to consumers and gains the revenue. The

Business to consumer model involves a business selling directly to consumers via a web site. This direct selling is the main reason that companies create these web sites. Also from these web sites' revenue models, online businesses can be sorted into five different categories such as "advertising revenue model, transaction fee revenue model, subscription revenue model, and sales includes house rental web sites and job searching web sites. At these sites, consumers choose to pay different amounts of money in order to access different levels of the service and reach the information.

b) Business to business e procurement

This is simply defined as e-procurement between companies. This is the type of e-procurement that deals with relationships between and among businesses.

About 80% of e-procurement is of this type, and most experts predict that Business to business e procurement will continue to grow faster than the Business to consumer segment. The Business to buisness market has two primary components: **e-frastructure** and **e-markets**. E-frastructure is the architecture of Buisness to buisness, primarily consisting of the following:

- Logistics - transportation, warehousing and distribution (e.g., Procter and Gamble);

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- Application service providers - deployment, hosting and management of packaged software from a central facility (e.g., Oracle and Linkshare);

- Outsourcing of functions in the process of e-procurement, such as Web-hosting, security and customer care solutions (e.g., outsourcing providers such as

- E-Share, NetSales, iXL Enterprises and Universal Access);

- Auction solutions software for the operation and maintenance of real-time auctions in the Internet (e.g., Moai Technologies and OpenSite Technologies);

- Content management software for the facilitation of Web site content management and delivery (e.g., Interwoven and ProcureNet); and

- Web-based procurement enablers (e.g.,a browser-based, XML enabled purchasing automation software)

c) Buisness to government e-procurement

Business-to-government e-procurement is generally defined as procurement between companies and the public sector. It refers to the use of the Internet for public procurement, licensing procedures, and other government-related operations. This kind of e-procurement has two features: first, the public sector assumes a pilot/leading role in establishing e-procurement; and second, it is assumed that the public sector has the greatest need for making its procurement system more effective.15 Web-based purchasing policies increase the transparency of the procurement process (and reduces the risk of irregularities). To date, however, the size of the Buisness to government e procurement market as a component of total e-procurement is insignificant, as government e-procurement systems remain undeveloped.

d) Consumer to consumer e procurement

Consumer-to-consumer e-procurement is simply procuring between private individuals or consumers. This type of e-procurement is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers. It perhaps has the greatest potential for developing new markets.

This type of e-procurement comes in at least three forms:

- Auctions facilitated at a portal, such as eBay, which allows online real-time bidding on items being sold in the Web;

- peer-to-peer systems, such as the Napster model (a protocol for sharing files between users used by chat forums similar to IRC) and other file exchange and later money exchange models; and

- Classified ads at portal sites such as Excite Classifieds and wanted (an interactive, online marketplace where buyers and sellers can negotiate and which features "Buyer Leads & Want Ads") Consumer-to-business transactions involve reverse auctions, which empower the consumer to drive transactions. A concrete example of this when competing airlines gives a traveller best travel and ticket offers in response to the traveller's post that she wants to fly from New York to San Francisco. There is little information on the relative size of global consumer to consumer e-procurement. However,

Consumer to consumer figures of popular sites such as eBay and Napster indicate that this market is quite large. These sites produce millions of dollars in sales every day.

e) M-procurement

M-procurement (mobile procuring) is the buying and selling of goods and services through wireless technology-i.e., handheld devices such as cellular telephones and personal digital assistants (PDAs). Japan is seen as a global leader in m-procuring.

As content delivery over wireless devices becomes faster, more secure, and scalable, some believe that m-procurement will surpass wire line e-procurement as the method of choice for digital procurement transactions. This may well be true for the

Asia-Pacific where there are more mobile phone users than there are Internet users.

Industries affected by m-procuring include:

- **Financial services,** including mobile banking (when customers use their handheld devices to access their accounts and pay their bills), as well as brokerage services (in which stock quotes can be displayed and trading conducted from the same handheld device);

- **Telecommunications,** in which service changes, bill payment and account reviews can all be conducted from the same handheld device;

- **Service/retail,** as consumers are given the ability to place and pay for orders on-the-fly; and

- **Information services,** which include the delivery of entertainment, financial news, sports figures and traffic updates to a single mobile device.

2.3 Effects of e-procurement on the supply chain management
Introduction;

No matter which e-procurement business model is chosen, the SCM issues are impacted positively or negatively. Thus the relationship between the SCM issues and the e-procurement models is of qualitative nature. With a particular choice of e-procurement business models, the quality of a supply chain with respect to a given SCM issue will improve, deteriorate, or stay constant. We take the approach of relative ordering in which, for a particular business model under analysis, the SCM issues that favour it are ranked higher than the ones that do not. Two special ranks need explanation. It is possible that an e-procurement model has no effect on or hinders an SCM issue. We give the lowest rank for models that are neutral with respect to an SCM issue. A model that hinders improving an SCM issue is given a high rank with respect to that SCM issue. Such a relative ordering saves us from giving exact score for a business model

Six forms of e-Procurement are described by de Boer *et al.* (2002);

- Electronic-Maintenance Repair and Operations (e-MRO),
- Web-based Enterprise Resource Planning (ERP),
- Electronic-sourcing (e-sourcing),
- Electronic-tendering (e-tendering)
- Electronic-reverse auctioning (e-reverse auctioning) and
- Electronic-informing (e-informing).

However, e-Procurement is not a totally new phenomenon. EDI applications have long been utilised by organisations as a foundation for close business relationships and Just In Time (JIT) operations (Kim and Shunk, 2004), and can be described as the first wave of e-Procurement systems (Chaffey, 2002). E-Procurement has made a fundamental impact on the nature of inter-organisational relationships (Roberts and Mackay, 1997). Internet technologies including

'Intranets' and 'Extranets' have been critical for electronic procurement by facilitating integration and coordinating across organisational boundaries (Grover and Malhotra, 1997).

Nevertheless, it has been noted that more research is needed on the influence that business-to-business relationships have on the successful use of e-Procurement systems (Knudsen, 2003). In particular, it has been argued that these issues are important as an organisation's supplier base and relationships are a major source of competitive advantage (Dyer and Singh, 1998).

E-procurement and information gathering in the Supply chain
The information gathering phase is the initial stage where an organisation goes in search for a supplier and 'gets a feel' for the market. The information gathering stage is deemed necessary when there is no established relationship with suppliers. The phase includes an initial procurement requirement definition and the conduct of preliminary market research. When a customer notifies the organisation about a need to buy or sell goods, the system immediately sends an email to the other registered member locations alerting them; this gives the customer an immediate base of suppliers or buyers. Surplus inventory suppliers are used to cut costs, reduce dependence and source products that are unavailable from its usual suppliers.

When procuring products from these suppliers the company's procurement system allows the creation of a substantial list of potential suppliers that can fulfil their requirement. This type of broadcast communication differs from the integrated and direct communication characteristic of collaborative supply relationships. Collaborative relationships studied are long-term, so there is little need for this phase within e-Procurement systems. In comparison, adversarial relationships have a bigger impact on the information-gathering phase of e-procurement systems as there is a need to constantly search for the lowest price in the market. As a result systems-based communication links with adversarial partners are not strong but the audience is much wider than the collaborative relationships.

E-procurement and making supplier contact
Another phase of Supply Chain, supplier contact, can be defined as the process of communicating with one or more suppliers after they have been deemed suitable. This communication may take the form of Requests for Quotation (RFQ), Requests for Bids (RFB), and Requests for Information (RFI) or direct contact with a supplier. Analysis reveals that the relative lack of trust within adversarial relationships is an important factor in the supplier contact phase. Instances in auctioning reveal the need for a communication audit trail between certain organisations due to lack of managerial support and lack of trust; both of which are clear indicators of an adversarial relationship.

Due to the nature of the adversarial relationships within any organisation's auction, the supplier contact phase has become much more visible with the introduction of an audit trail. The shortage and surplus market is marred by fraudulent acts. With little or no supervision, personal relationships began to develop between some junior managers and buyers. This resulted in instances where goods were sold at very low prices as a result of the buyer providing 'incentives' to particular managers. Also low trust between the participants in the auction has led to buyers (especially large organisations) wishing to keep their identity anonymous in order to be quoted fairly.

E-procurement and Negotiation in the Supply Chain

The past researches suggest that face-to-face contact is needed for negotiating collaborative relationships. It is also evident that suppliers are being forced to reduce their prices through a rigorous negotiation phase in adversarial relationships. However, due to the high value of trust this practice is rarely tolerated in collaborative relationships. Overall, the negotiation phase plays a bigger part in e- Procurement systems for adversarial relationships than collaborative relationships. High transferability translates into the ability to switch suppliers with relative ease. This is facilitated in adversarial relationships, as there is a large base of potential suppliers to choose from. In addition, there is very little integration with suppliers allowing relationships to be discontinued with little cost.

The goal of buying organisations in this situation is to leverage this competitiveness to get the best possible price from their supplier and leverage the competitive market by facilitating a global reach for 24 hours a day, seven days a week. Also the ability of *'ensuring competitive bidding'* shows that and organisation is committed to getting the best price for its customers. The disadvantage of using such a cost-led approach is that suppliers can feel unfairly treated. This can be seen when buyers are trying to source products at very short notice. During these situations it is common practice for suppliers to massively increase the price of the product in retaliation.

In comparison the ability within an organisation to switch suppliers is very low. The small base of potential suppliers and high integration into supplier systems gives procuring entities very few options. Also within the same organisation there is a lot of *'grand fathering'*. This phrase, used by Supply Chain Project Managers, captures an organisation's choice to deal with suppliers because they have dealt with them in the past. In fact many of the collaborative

relationships involving procuring entities have evolved from long-term relationships. As a result, negotiations of new contracts are done in a more traditional way and are handled by face-to-face meetings.

Other initiatives of E-procurement with regards to Supply Chain

E-Catalogue is the electronic catalogue of goods/services where a buyer can create his order and submit it to the supplier. They are usually based on the framework contract established between the buyer and supplier. They are very useful for repetitive orders of low value goods. Currently catalogues are built on different standards e.g. XML and many of them are not compliant with CPV (common procurement vocabulary).

Notification starts the e-Procurement process. The Contract Awarding committee, planning the public procurement, prepares a call for tender and sends a notice to be published through the appropriate publication services. At this stage due to use of Information and Communication Technologies it is possible to inform simultaneously the publication businesses registered to the e-procurement platform through email or personalised web page of new tenders, which might be of interest for them based on criteria they defined before.

E-Tendering covers the preparation of an offer by tenderer and its submission to the awarding authority. Building tenders by electronic means can be based on structured questionnaires, though the effectiveness of such solution depends a lot on the experience of people defining such questions and criteria of evaluation of tenders. The awarding authority receives tenders, but is not allowed to open them before the prior appointed opening date. Sometimes term e-Tendering is used in broader meaning and includes entire contract establishment process, but it is not a case in this study.

E-Ordering covers issuing an order by buyer (public authority), order acceptance by supplier and delivery of ordered goods, services or works. Usually orders are based on framework contracts, which were established in contract establishment process (electronic or paper-based one). Well-established e-Procurement systems allow for partial deliveries.

E-Invoicing – after the successful delivery the supplier issues the invoice and payment from buyer to supplier should take place.

E-Awarding phase begins with opening of tenders. After checking contents of tenders winning tender is selected. This selection can be automated provided that there are assigned weights to specific features of tenders (it is particularly feasible if the tenders are built on questions). The e-Procurement system can give just the recommendations and the last word belongs to the awarding authority. The chosen tenderer and rejected suppliers are informed on the results of the evaluation.

E-Contracting Once the best tender has been selected, awarding authority establishes agreement with the supplier. This process to be held electronically requires legal recognition of digital signatures and electronic contracts.

Impacts of E-procurement on parties in the supply chain

E-procurement is now driving changes in SCM. It has two major influences: vertical integration between trading partners – both shippers and logistics service providers, and the appearance of completely new functions and companies. The former relates to information sharing, common planning, and exchange of existing functions by way of supply chain integration which is supported and driven by ICT and e-procurement. The main requirement is that the partners in the chain are sufficiently informed about each other's processes and mechanisms so that they can anticipate another's needs and operate near an optimum level. Technological advances support this process by bringing about improvements in information exchange. Firms making components or products required for shipment can have up to the minute information on stocks and their usage for production and arrange for immediate replacement so that minimum amounts of stock are held on site.

A consequence of e-procurement development therefore is that information becomes more easily available to all partners in the supply chain. Threats come to those parties in the chain who have traditionally earned a living on their access to scarce information since the switch over to e-procurement may leave little room for them. Agents, freight forwarders, wholesalers, retailers, those concerned with logistics functions such as consolidation, storage, picking, and marketing will all face more and more competition from e-procurement sales channels. This is described as disintermediation resulting in certain intermediation roles in the chain becoming redundant. On the other hand, in large markets such as transport, parties in the chain may have difficulty finding the information they are looking for or may not be

able to handle it. It is this area that is opening up new opportunities with new roles in the supply chain filled by information brokers or informer-diaries.

Impact on distribution

Time and cost advantages of e-procurement brought about through order processing and logistics planning increase the emphasis on time-definite delivery. Therefore, patterns of distribution are also likely to change both globally and locally. In global e-procurement, the impact on air cargo is likely to be significant. As inter-continental transactions become more common, it is reasonable to expect that e-procurement segments will contribute to air cargo growth, in order to fulfil the global requirement for speed and bespoke delivery especially in Buisness to buisness.

However, document transmission, which may eventually be siphoned off by the internet, stands out as a major uncertainty.

Therefore, it is possible to conceive of two divergent impacts on transport: first, greater disaggregation of freight flows at the urban level, but second, greater consolidation of long distance consignments. E-procurement can contribute to achieving an efficient distribution system. For example, transportation exchange by e-procurement can affect distribution by replacing the time-consuming role of agents who brought together those offering cargo and those offering shipping capacity. By using website approaches, shippers can bid for container space offered by carriers and provide information on their needs to various carriers. They can search online and select ones offering the best rates or transport conditions. Conversely carriers can bid on shipper's available cargo and provide information on unsold capacity.

This online sale of transportation improves the efficiency of distribution at very low cost. Another positive impact of e-procurement on distribution is shipment tracking employing interactive internet applications. This is particularly pronounced in the express parcel delivery service industries and now constitutes a significant share of internet applications used in freight transport services. It involves global positioning systems keeping track of vehicles so that customers know exactly where the shipment is at any given time. Combined with bar coding, records of a parcel's location are monitored at all times from pickup at the origin to final destination. This is a major contribution to reducing the incidence of loss or theft.

These developments can lead to increased outsourcing and consolidation of transport services. Therefore, it may lead the way to a better utilisation of intermodal transport services, especially in long-distance transport, which is likely to increase by globalisation of supply chains. However, in local distribution, the ability of the transport system to accommodate highly fragmented freight shipment (less than full truckloads) could represent a threat for intermodal transport.

2.4 Limitations of e-procurement to organisations

Lack of sufficient system security, reliability, standards and communication protocols:

There are numerous reports of websites and databases being hacked into, and security holes in software. For example, Microsoft has over the years issued many security notices and 'patches' for their software. Several banking and other business websites, including Barclays Bank, Powergen and even the Consumers' Association in the UK, have experienced breaches in security where 'a technical oversight' or 'a fault in its systems' led to confidential client information becoming available to all.

Rapidly evolving and changing technology:

There is always a feeling of trying to 'catch up' and not be left behind.

Under pressure to innovate:

Develop business models to exploit the new opportunities which sometimes lead to strategies detrimental to the organisation. The ease with which business models can be copied and emulated over the Internet increases that pressure and curtails longer-term competitive advantage.

Facing increased competition:

From both national and international competitors often leads to price wars and subsequent unsustainable losses for the organisation.

Problems with compatibility of older and 'newer' technology:

There are problems where older business systems cannot communicate with web based and Internet infrastructures, leading to some organisations running almost two independent systems where data cannot be shared. This often leads to having to invest in new systems or

an infrastructure, which bridges the different systems. In both cases this is both financially costly as well as disruptive to the efficient running of organisations.

Limitations of e-procurement to consumers

- *Computing equipment* is needed for individuals to participate in the new 'digital' economy, which means an initial capital cost to customers.
- *A basic technical knowledge* is required of both computing equipment and navigation of the Internet and the World Wide Web.
- *Cost of access to the Internet,* whether dial-up or broadband tariffs.
- *Cost of computing equipment.* Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirement of the Internet, websites and applications.
- *Lack of security and privacy of personal data.* There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data.
- *Physical contact and relationships are replaced by electronic processes.* Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings.
- *A lack of trust because they are interacting with faceless computers.*

Limitations of e-procurement to society

- *Breakdown in human interaction.* As people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in where people are more comfortable interacting with a screen than face to face.
- *Social division.* There is a potential danger that there will be an increase in the social divide between technical haves and have-nots – so people who do not have technical skills become unable to secure better-paid jobs and could form an underclass with potentially dangerous implications for social stability.
- *Reliance on telecommunications infrastructure, power and IT skills,* which in developing countries nullifies the benefits when power, advanced telecommunications infrastructures and IT skills are unavailable or scarce or underdeveloped.

- *Wasted resources.* As new technology dates quickly how you do dispose of all the old computers, keyboards, monitors, speakers and other hardware or software?
- *Facilitates Just-In-Time manufacturing.* This could potentially cripple an economy in times of crisis as stocks are kept to a minimum and delivery patterns are based on pre-set levels of stock which last for days rather than weeks (see Case Study).
- *Difficulty in policing the Internet,* which means that numerous crimes can be perpetrated and often go undetected. There is also an unpleasant rise in the availability and access of obscene material and ease with which paedophiles and others can entrap children by masquerading in chat rooms.

Another challenge is in local distribution, which expects rapid delivery while being price-sensitive and which normally favours surface-based transport. Roads are likely to remain the surface mode of choice because of the inherent flexibility of vehicles involved and their usage. Rail and inland water are likely to prove less adaptable to the flexible distribution of goods. Shipping costs remain one of the biggest deterrents for consumers who are considering online purchase of physical goods. Traditional warehouse and distribution centres are not well suited to the business of ecommerce fulfilment. Newly-designed systems are needed. Lack of low-cost and efficient distribution systems are impeding the economic advantages of online shopping and it may be that traditional retailers will have to address this themselves.

Difficulties in distribution may lead to switching from high density channels such as warehouse and shopping centres to low density routes involving factory and residential areas one may imagine a scenario in the future in which cities are occupied by small freight vans practising just-for-you distribution to a consumer. The vans depart from distribution centres at city boundaries. Traffic between such distribution centres and production centres would usually be long distance but efficiently organised by large-scale cooperation and consolidation to accommodate small unit shipment.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

A survey instrument was developed for achieving the objectives and answering the questions developed using data gathered from a review of current literature combined with in-depth case study with Sony Sugar Company in Kenya together with ten of their suppliers. The focus of this case study refined the variables developed from the literature review, gain a greater understanding of the most important issues with regard to organization. Sony Sugar Company has been operating for more than twenty years. In terms of organization size, this sugar factory has more than 1000 employees, 80 of them being in the entire procurement department.

3.1 Research Methodology

This study was based on results from a single embedded case study (Kakira Sugar Works). The study embarked upon during September 2013 and was conducted for duration of one and a half month.

The following were the central objectives of the study;

(1) To understand the complexity of E-procurement and its many facets at Kakira Sugar Works (2) To investigate the benefits Sony Sugar has derived from using E-procurement on the Supply Chain Management.

(3) To identify the difficulties Sony Sugar has encountered in trying to build up electronic procurement systems.

A page long interview guide was e-mailed to the interviewees before the enquiry. The questions posed during the interviews were informed by a detailed literature review and secondary research about Kakira Sugar Works as enquired. Interviews were also be questionnaires recorded and transcribed upon obtaining interviewee's permission. All stakeholder types were in principle be enquired about the same issues; their involvement and their perception of others involvement in E-procurement in the organisation.

Questions posed during interviews were open ended with few exceptions. When some interviewees become simply too long winded, a few well specified questions were posed. During interviews, the author will sought information on other stakeholders involved in the diffusion of E-procurement. An interview lasted on an averaged for about 20 minutes. Secondary data will be collected from the following sources; consultant reports, national statistics, newspaper reports and Internet home pages.

3.2 Research Design

Grounded theory methodology has been chosen for this study due to its appropriateness for the research questions (determining ``how'') and the phase in the scientific process (exploratory research of a new phenomenon). Data analysis began immediately following the first interview and will continue throughout the data collection process, allowing the developing theory to direct the research. Specific techniques prescribed by grounded theory methodology were used to analyze the data collected. Transcribed interviews, memos, field notes, and company documents were all coded in order to categorize, name, and identify properties and dimensions of the research.

The basic process of analysis involved continually questioning the information obtained and making comparisons among coded sets of data. These techniques allowed the theoretical concepts to emerge from the data. Interview transcripts and company documents were systematically organized and coded independently by the researcher, which resulted in 95 categories of meaning. The researcher reconciled their codes, and any initial discrepancies resolved.

3.3 Population of the study and sample size

The target population of this study was Kakira Sugar Works in Uganda. Samples will be randomly drawn from the various units of the company's procurement department, i.e. the main store, warehouse, petrol station and the head office of procurement. As the company is a directory consisting of manufacturing processes based on its revenue and employee size as well as having the necessary raw materials (sugarcane), joint venture and partnerships, it is viewed as a valid representation of the entire Uganda Sugar Industry. The unit of study for this research will therefore be just this organization. The survey will be administered to 20 employees and 4 managers from the purchasing department of Kakira Sugar Works. The mail survey will be the main form of data collection.

3.4 Sampling design and procedures

In the first phase, the study looked at the current initiatives currently undertaken in Kakira Sugar Works procurement and supply chain processes. From these identified initiatives some will be chosen for a more detailed evaluation in order to obtain a good overview of existing E-procurement applications in the company's supply chain In the second face all potential obstacles to the implementation of e-procurement that are faced in the factory was identified, together with the different possibilities which could enable smooth e-procurement.

3.5 Data Analysis

Analysis of the critical success factors through the use of citation frequency as a measure of their importance was used to reveal that among the many adoption levels of E-procurement in the Supply Chain, E-procurement factor is overly predominant. In order to further understand the relative importance, the literature review concentrated more on e-procurement process. Change management, e-Procurement implementation strategy, process re-engineering, performance measurement, and technology standards are factors that involve aspects of both categories of supply chain and E-procurement.

While this type of analysis is subjective and exploitative, the prominence of E-procurement in the success of e-Procurement implementations at Kakira Sugar Works is apparent. This suggests that where there is a conflict between supply chain and e-procurement issues, the returns on e-Procurement initiatives may be higher if more attention is given to the supply issue.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF THE RESULTS

4.0 Introduction

The data presented in this chapter are those collected using the questionnaires issued to the 20 employees in the company's procurement department and 4 managers in the company. Of the 20 employees who received questionnaires, 11 of them returned theirs fully answered. These were the ones used in data analysis together with 3 of the 4 issued to the top managers.

4.2 Background information of Respondents

The data interpretation will be done on 33 questionnaires.

Table 1: Below shows respondents age brackets

Age brackets	Frequency	Percentage
20- 25	1	5
26- 30	2	12.5
31- 35	12	50
36- 40	3	15
40 - Above	5	17.5
Total	**24**	**100**

The table 1 above shows that the majority of respondents 50% were in the age brackets of 31-35 and 40 and above. The findings therefore indicated that the majority of the respondents are of the family age which is 31-35.

Table 2 : Showing the sex of respondents

Sex	Frequency	Percentage (%)
Male	16	65
Female	8	35
Total	**24**	**100**

According to the above findings most of the respondents were female because they had the highest percentage of 65% while men were 35%. This shows that most of those who are involved in small and medium enterprises in the area are men.

4.3 Respondents relation

Education characteristics of respondents

Details about the education levels of respondents were obtained and the results are revealed in table 3 below;

Table 3 : Showing Education Levels of Respondents

Qualification	Frequency
Diploma	9
Bachelor	11
Masters	2
PhD	1
Other	1
Total	24

Source: Primary data

In table 4.2 above, it can be revealed that majority of respondents who are also the employees show that they hold masters degree, followed by bachelors, PhD, diplomas and others in the orders of 60%, 18%, 13%, 5% and 3% respectively. This means that the respondents are adequately qualified persons academically.

Table 4 : Showing the Duration of work

Duration	Response
1 month – 1 yaer	5
2 -3 years	12
4-5 years	3
6 years and above	4
TOTAL	24

4.4 BACKGROUND INFORMATION

The organization under study (Kakira Sugar Works) is a well-established sugar production company. In the past, the organization's focus has been on the production and distribution of sugar and its bi-products, such as molasses; about three years ago, a decision was taken to transform the organization into a provider of on-line information in its domain, requiring a transformation to E-procurement. This e-transformation has meant that the strategies of the organization's different business processes are aligned; the organization as a whole is dependent on its capability of delivering effective products for ultimate customer services. The three major organizational aspects of the entire e-transformation process were identified by senior management as follow:

- Effective change management strategies.
- A successful adoption and diffusion of a formal Object-Oriented (OO) software development process along with the required elements of Internet and web services technologies.
- A successful reengineering of existing procurement processes to support e-business.
- The e-transformation project was driven by a strong business case to enable the organization to compete effectively in their market place. A business case was approved by senior management to place approximately 60 databases online.

4.5 VERIFICATION OF RESEARCH OBJECTIVES

E-procurement is a new way of conducting business, and as with any other new application of technology, it presents both opportunities for improvement and potential problems.

– Identify several advantages of E-procurement.

– Identify some of the major challenges that Kakira Sugar Works has to overcome to succeed in E-procurement.

– Describe some of the current uses and potential benefits of E-procurement.

– Identify several E-procurement applications.

4.6 DATA COLLECTED FROM QUESTIONNAIRES (FINDINGS)

Wideness of Kakira Sugar Works Supply Chain wideness

This area was well broken down well by the Procurement Department's manager as follows:

♦ Facilities concern the location, size and operations methodology of the places where products are fabricated, assembled or stored.

♦ Inventory includes all of the materials in the supply chain, including raw materials, in-process work, and finished goods.

♦ Transportation concerns the movement of materials in the supply chain.

♦ Information influences supply chain performance by affecting the ways that organizations in the supply chain request, respond, and inform one another.

♦ Consumers concern those who buy sugar and molasses.

♦ Suppliers are many, for instance, suppliers of factory materials, and suppliers of sugarcane, international suppliers and agricultural materials such as fertilizers.

Figure 1 : Showing the wideness of each of kakira sugar works supply chain component
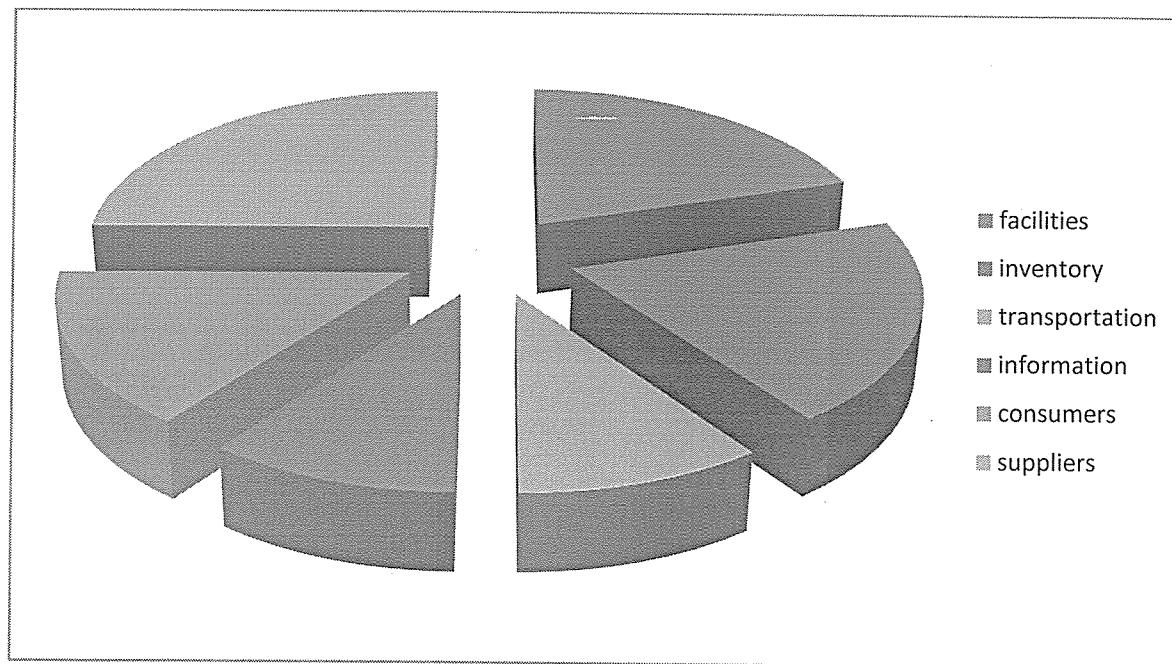
Analysis:

It is evident from the presentation that the company is more into inventory, facilities and suppliers than information gathering. On the other hand, transportation is not a wide aspect

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of the company's Supply Chain because as the researcher found out, most of its customers are distributors of sugar so the company is not involved much in transportation of sugar. Suppliers of sugarcane too bring their produce to the factory.

Has Kakira Sugar Works been able to adopt new levels of E-procurement?

Of the 11 employees and 3 managers who responded, the researcher gathered that 10 of the employees were for YES option and 2 of the managers were for NO option. The managers felt that the company has not yet done enough to adopt new levels of E-procurement.

Figure 2 : showing the managers who responded, in adopt new levels of e- procurement
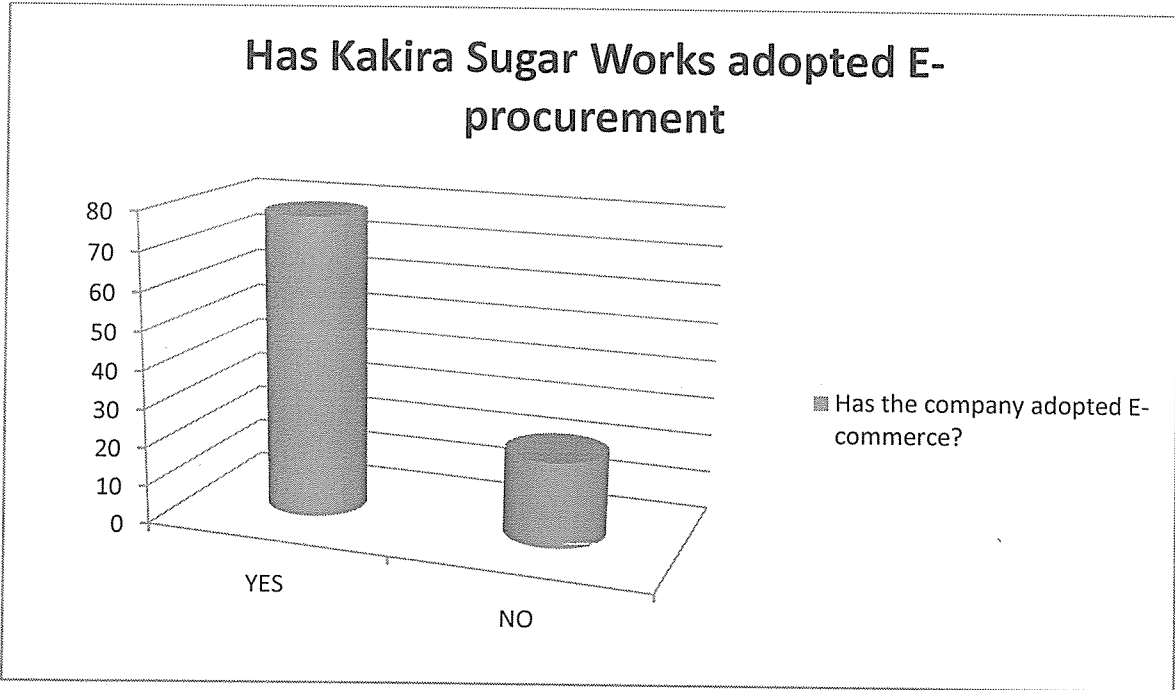
Analysis:

The information above translates to a 90% of the total employees, and 50% of the managers accepting that the company's procurement department has adopted new levels of E-procurement. In general, a total of 11 interviewees were for yes option, translating to 78% for YES and 22% for NO options.

How Kakira Sugar Works Procurement Department has adopted new levels of E-procurement

Most of the employees and three managers who responded cited that the company's Supply Chain encompasses all of the following processes and systems:

_ **E-Request for Quote** – simple electronic request for competitive quotations from specified suppliers and facility to receive quotes, select one and convert it into a purchase order.

_ **E-Tendering** – Electronic issue and secure receipt of tender documents.

_ **E-Sourcing** – A valuable bolt-on supplement to E-tendering which facilitates compilation of pre-qualification and tender documents from a standard template and automates the evaluation process

_**E-Auctions** – a process for conducting a reverse auction via the web. Essentially a means of driving down prices in highly competitive markets as an alternative to the traditional tender process. Usually facilitated by a specialist provider for a one-off fee, using their own software and website.

_ **E-Ordering** – facility to generate a requisition, authorise it and convert it into a purchase order.

_ **E-Catalogues** – catalogue of services or (more usually) goods available in electronic form which may sit on the supplier's website or in the buyer's back office system. May have the facility to select items and generate a purchase order.

_ **Internet Ordering** – ability to access e-catalogues and place orders direct on suppliers' websites (without any link to Sony Sugar's back office systems).

_ **E-Marketplace** – portal from back office system to a number of suppliers catalogues or contract content. Usually developed on regional or sub-regional basis. Promotes local e-business development; effectively allows suppliers to develop single interface to finance systems of Supply Chain in the company.

_ **E-Invoicing** – facility to receive electronic invoices directly into the back office system.

_ **E-payments** – facility to pay suppliers electronically using Bankers Automated Clearing Service, direct debit or corporate purchasing cards.

_ **Procurement Cards** – government backed purchasing cards scheme which provides prompt invoice-free payment to suppliers, backed by a monthly electronic statement which is received direct into the back office system.

_**Selling to the Sony Sugar website** – a guide to suppliers on the company's approach to procurement, details of forthcoming contract opportunities and contact details.

_ **Single business account** – a cross cutting account whereby suppliers are allocated a unique identifier that can be managed via a corporate CRM system to facilitate ready access to all relevant details about the supplier's dealings across the company.

Figure 3 : Showing Kakira sugar works e-procurement adoption level
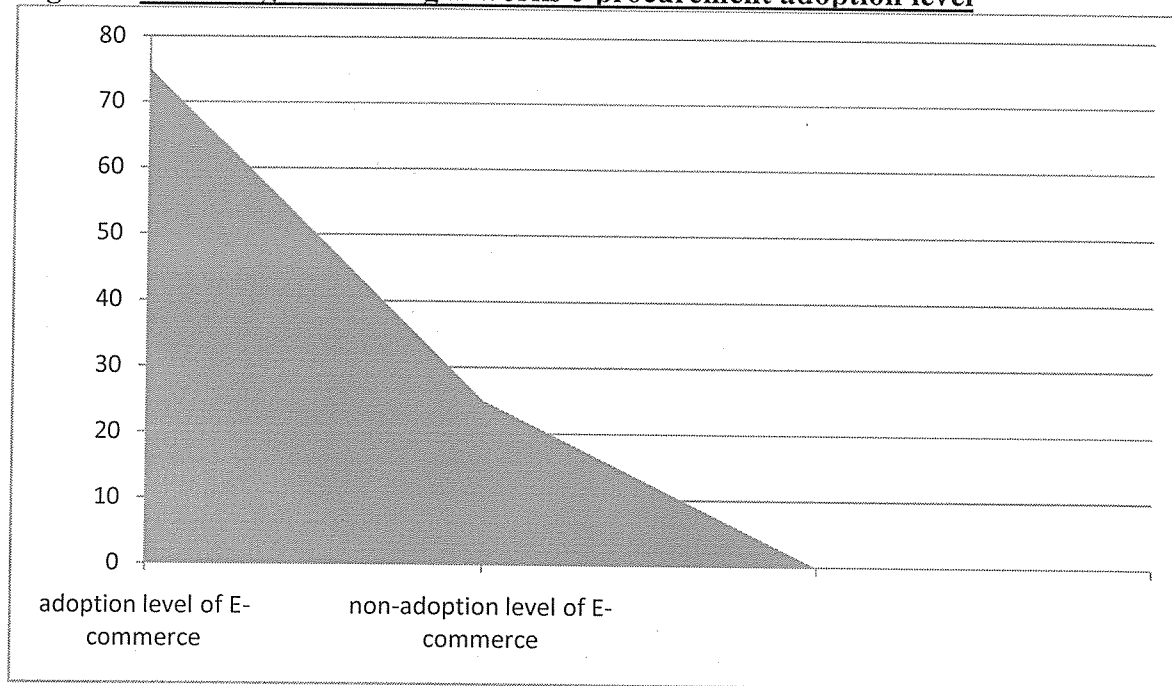
Analysis:

From the above data, it is evident that Kakira Sugar Works procurement department has a very huge percentage level of E-procurement adoption, i.e. 75%, leaving only a 25% room for improvement in the discipline. Electronic systems have really been incorporated in the company's procurement department.

How E-procurement has transformed the company's internal supply chain (E-procurement)

Many of the benefits predicted for E-procurement were over-optimistic as they include procurement benefits which Sony Sugar has realised without introducing e-Procurement. They were based on organisations in which the benefits of professional purchasing and supply management strategies have not yet being realised or where purchasing and supply management solutions have been implemented and the outcomes are being incorrectly attributed to e-Procurement.

Kakira Sugar Works has implemented E-procurement in its internal supply chain for long enough to have realised tangible business benefits. E-Purchasing, for instance, has changed the dynamics of the purchasing and supply management profession as for example there was a greater emphasis on knowledge management. The interviewees stated that e-Purchasing has changed the **culture of purchasing** and supply management in the organisation and may lead to a greater emphasis on cost and prices in the future

E-Purchasing has also facilitated purchasing from **global sources** of Kakira Sugar Works. Such changes have presented purchasing and supply management professionals of the company with enhanced career opportunities.

E-Purchasing has released time to be spent on more value-add aspects of purchasing such as the development of end users' purchasing competencies and the **development of suppliers**. It is an opportunity to deploy competencies to the greatest effect. E-Purchasing can enhance transactional purchasing by providing end users with quick and easy to use electronic systems such as electronic catalogues for selecting and purchasing their requirement from preferred suppliers. This should **reduce transactional costs** by improving speed and efficiency and provide greater commitment to contracts by the reduction of "maverick purchasing" i.e. purchases made outside an organisation's contractual arrangements.

Kakira Sugar Works employees believe that e-Purchasing will continue to develop with new technologies becoming available for the more sophisticated aspects of purchasing and supply management. E-Purchasing has the potential to **facilitate communication** between purchasers, their customers, suppliers and employees. It can encourage suppliers to become more efficient and more focused on meeting the organisation's needs.

E-Purchasing has also provided **added value** to Sony Sugar's internal procurement function and as such will improve procurement strategy as it will, for example: generated accurate and detailed management information which should enable strategic insight into organisation's buying patterns enable improved sourcing, supplier management, improved scheduling, reduced stock holding, demand management and supplier performances.

Advantages of E-procurement that Kakira Sugar Works has enjoyed as gathered from the questionnaires

There are benefits for the company's supply chain system which has embraced E-procurement operations. Some of the more commonly reported supply chain benefits are stated.

Benefit and Explanation *Better Availability of Service*; This conveniently has allowed customers of Sony Sugar Company to shop anywhere online, but also helps a firm achieve customer focus goals by providing computer transaction information to more efficiently identify and segment consumers.

Cost Reduction in Information Processing; this has reduced the company's costs of processing and retrieving order and customer information.

Better Timeliness of Service; online capabilities can offer customers 24-hour product ordering and purchasing services. Combined with automated warehousing systems, this can rapidly process payments and deliver products.

Better Access to Customer Markets; Online services open global markets and new and larger markets than brick-and-mortar facilities.

Less Expensive Initial Cost of Operations; The capital investment in E-procurement facilities is considerably less than for brick-and-mortar operations. A virtual business may not even own or spend money acquiring expensive, physical structures like buildings.

Less Expensive Operating Costs; The expenditures of running a virtual or E-procurement operation is less than brick-and-mortar: less people, less physical equipment, less paper work, etc.

Better Purchasing Prices from Suppliers; The competitive nature of online E-procurement businesses allows for more pricing information to be shared with customers, thus, increasing competition, which can result in lower costs to all supply chain partners.

Improved New Product Development (NPD); The ability to be online with R&D allows expertise from around the world to participate in NPD, which can help reduce the time-to-market for new products and the costs of their development.

Improved Scheduling The online ability to keep track of product or service activities (i.e., coordinating purchase orders with production efforts to fill them) allows schedulers to be more accurate and timely in scheduling and rescheduling production activities, which can reduce costs.

Better Supplier Quality The information available online through E-procurement allows purchasers to more easily learn about material and component quality, permitting a more informed decision on what is possible in terms of quality.

Another benefit of E-procurement concerns the lean notion of avoiding waste; E-procurement operations can permit a reduction of unneeded supply chain partners. E-procurement supply chains have the ability to reduce overall costs by eliminating intermediaries in the distribution and retailing of products or services.

Classifications of E-procurement employed in Kakira Sugar Works Supply chain

Of the 5 classifications of E-procurement presented to the interviewees in the questionnaire, this is how they responded by ticking YES:

Table 5 : Showing the numbers of interviewees who responded

Classification	Total number of interviewees who responded	Number of employees who ticked yes
B2C	14	14
B2B	14	14
B2G	14	14
C2C	14	None
M-commerce	14	None

Analysis:

From the above presentation it is evident that Sony Sugar has fully employed B2C, B2B and B2G classifications of E-procurement. C2C and M-commerce have not yet been adopted by the company.

Challenges that Kakira Sugar Works Company must overcome to succeed in E-procurement

A web enabled supply chain management system is a positive solution for enhancing supply chain management. It allows the companies in the supply chain to communicate easily and effectively with each other. It also provides easy access to data generated, which can be organized to provide useable information to those that need it. This can reduce the problem of information overload, where individuals are provided with too much information to process,

while not being provided with what they really need to know. While these are major benefits, there are also various difficulties involved in building an E-procurement system.

One of the major problems that Kakira Sugar Works has encountered relates to problems with integrating the technology used by its various parties in the supply chain. Quite often, the company uses a software system that will not integrate easily with supplier its technologies. This has created a problem that requires one of the suppliers to change their system to allow integration.

In the case where Sony sugar has one major customer, this may not be so problematic. However, the factory supplies to various clients, and even to hundreds of clients. The same applies when the company receives goods from suppliers, where it has various suppliers and not just one. This has created a problem as to how the company can adapt to ensure integration with a range of suppliers and retailers.

Another concern raised by the interviewees relates to issues of safety and privacy. Sharing of information and systems between Sony Sugar and its partners often create issues with its management in regards to securing company information and ensuring safety. This can be a substantial problem for Sony Sugar who considers themselves at high risk of hackers, corporate sabotage due to its substantial business secrets. This problem associated with sharing of information means that E-procurement systems often have to be created with protection systems built in.

The final problem as reported is that few E-procurement systems can be created to work effectively initially in the procurement department of the company. The development and the implementation is not generally a quick and simple process, but a long one based on developing and then assessing the system. This means that the development of e- commerce system often involves a large input of time and money, while not necessarily providing initial benefits.

Effects of E-procurement on Kakira Sugar Works E-procurement

Revenue Opportunities	Cost Opportunities

• **Direct sales**
  ◦ Increased margin from eliminating intermediaries
• **Product information:**
  ◦ Flexibility on price and promotions
  ◦ Wider product portfolio offering
  ◦ Faster time to market
• **Negotiating prices and contract terms:**
  ◦ Price and service customization
  ◦ Downward price pressure due to increase competition
• **Order placement and tracking:**
  ◦ Access at anytime from any place
• **Fulfilment:**
  ◦ increased availability by aggregating information
  ◦ Shorter response time Increased choice of delivery options
• **Payment:**
  ◦ Efficient funds transfer may improve cash flow
	Facility costs:
	  ◦ Site costs: eliminate intermediaries or retail and distribution sites
	  ◦ Processing costs: customer participation, smoothed capacity requirements
	• **Inventory costs:**
	  ◦ Reduce cycle stock (geographic centralization)
	  ◦ Reduce safety stock (statistical aggregation)
	  ◦ Postponing product differentiation to after order placement
	• **Transportation costs:**
	  ◦ Inbound
	  ◦ Outbound
	• **Information sharing improves supply chain coordination:**
	  ◦ Reduce bullwhip effect
	  ◦ Shared planning and forecasting

How Kakira Sugar Works suppliers relate with the level of E-procurement applications in the company's procurement processes

Kakira Sugar Works suppliers have related to its E-procurement application in 3 aspects, i.e.

Goods and Services Mix: Online Supplying to the company; Value-Added services; Automated Payment at Point of Sale (POS) through mobile Commerce; Internet Portals; Customer Loyalty card as Service Card in a value Network; Basing pricing decisions on facts from (real-time) evaluation of campaigns; Reducing Mark Down through more accurate demand forecast and storage.

Communication Mix: Online Marketing; Mobile Marketing; Online Catalogues and Display of Products and Services; Deploying CRM for Customer Purchasing Data and Customer Loyalty Program; directing sales traffic from Stores to Internet and vice versa; creating a multi-channel view of Customer; Developing Customers.

Physical Distribution Mix: Improving Product Quality and supply costs through better product sourcing in e-Procurement platforms; increased inventory turnover through improved supply chain techniques; supply chain management increases sales through

decreasing out-of-stock; increased sales force productivity through sales force automation through mobile commerce.

Involvement of the company's supply chain in various forms of E-procurement:

Of the 5 forms of E-procurement presented to the interviewees in the questionnaire, this is how they responded by ticking YES:

How E-procurement has related to Kakira Sugar Works Information Gathering and sharing:

The study of Kakira Sugar Works showed that information sharing is related to the use of IT, and the term, sharing, includes formal and informal information, communication and determination of customers' future need, and even participation in sourcing decision. E-procurement has played more and more central role in SCM of the company. Hence, there is a hypothesis that can be created here: *E-procurement is positively related to information sharing.*

Usage of Kakira Sugar Works in Making Supplier Contact:

Analysis:

8 interviewees out of the 14 who responded ticked YES we do option for making supplier contact, which is a 57% figure. 4 of them ticked the second choice, which stated that, 'At times, but in other contracts we don't, which is a 28% figure. The remaining 2 employees ticked the first option. 'No we don't, which is a 15% figure.

Table 6 : Showing interviewees option for making supplier contact.

Classification	Total number of interviewees who responded	Number of employees who ticked yes
Electronic Maintenance Repair Operations (MRO)	14	14
Electronic Data Interchange (EDI)	14	14
E-sourcing	14	14
E-revenue Auctioning	14	None
E-informing	14	14

Figure 4 : showing the usage of E-procurement in making supplier contact at kakira sugar works
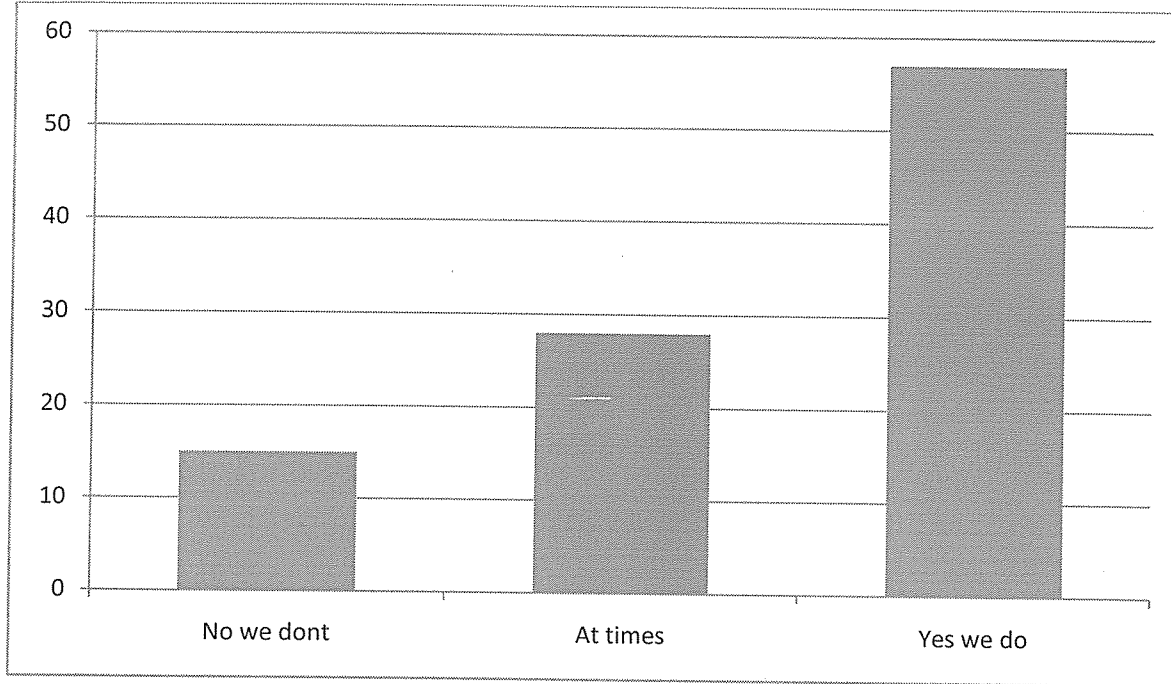
Apart from face-to-face contact, has been E-procurement been useful for Kakira Sugar Works procurement department in negotiating for collaborative relationship with its suppliers?

Analysis:

This is how the interviewees responded to this question;

8 interviewees out of the 14 who responded ticked GREATLY option for making supplier contact, which is a 57% figure. 4 of them ticked the second choice, which stated that, 'MODERATELY, which is a 28% figure. The remaining 2 employees ticked the THIRD option, 'NOT AT ALL, which is a 15% figure.

Figure 5 : Showing the usage of E- procurement in Negotiation at Kakira Sugar Works

Usage of E-procurement in Negotiation at Kakira Sugar Works

- Not at all
- Moderately
- Greatly
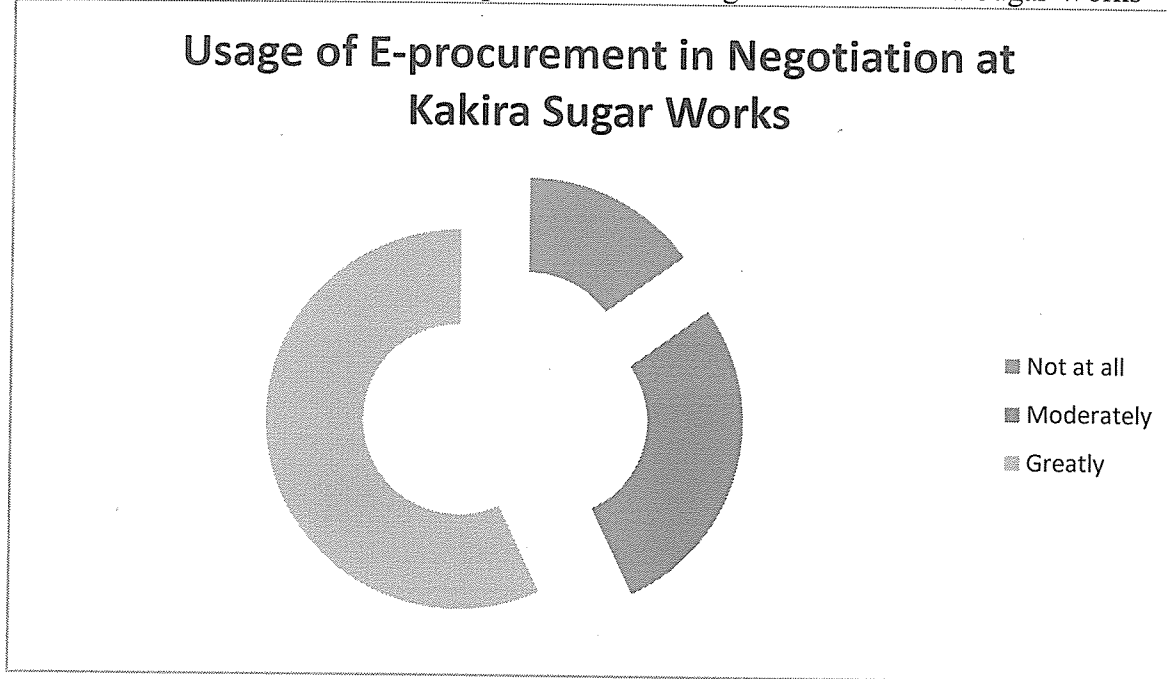
Initiatives of E-procurement adopted by the company's supply chain managers:

Analysis:

Of the 7 initiatives presented to the interviewees, all of them received a YES from all of the 3 managers who responded. This means that all of them are adopted by the company's supply chain managers. The researcher did analysis with only the questionnaires which were ticked by the mangers because of the nature of the question.

Table 7 : showing the influences of E-procurement on Kakira sugar works partner relationship

Initiative of E-procurement	Total number of managers who responded	Number of managers who ticked for YES
E-catalogue	3	3
E-ordering	3	3
E-tendering	3	3
E-contracting	3	3
Notification	3	3
E-invoicing	3	3
E-awarding	3	3

Influence of Kakira Sugar Works adoption of E-procurement on its partners:

According to the statistic results, E-procurement does not enhance partner relationship. The Sony Sugar case showed that partner relationship is not a key factor in sugar production. For them, product quality and price are the most important issues. Therefore, E-procurement in this research does not significantly enhance partner relationship to promote supply chain performance.

But partner relationship is, in general, still a very important factor to promote supply chain performance as in many references and the argument of scholars. The analytical results indicated that E-procurement is positively related to information sharing. This study discovered that firms should implement e-procurement systems in supply chain for better communication and performance improving. The value of information and the coordination between partners are also important issues for information sharing.

Analysis:

It is therefore clear that Ecommerce may have a variable influence on partner relationship, depending on how the company values its partner's relationships. In the case of Sony Sugar it is a case of 50-50 influence, meaning that the company does not entirely rely on partner relationships.

Figure 6 : showing the Influence of Kakira Sugar Works adoption of E-procurement on its partners:

Influence of E-procurement on Kakira Sugar Works Partner Relationship
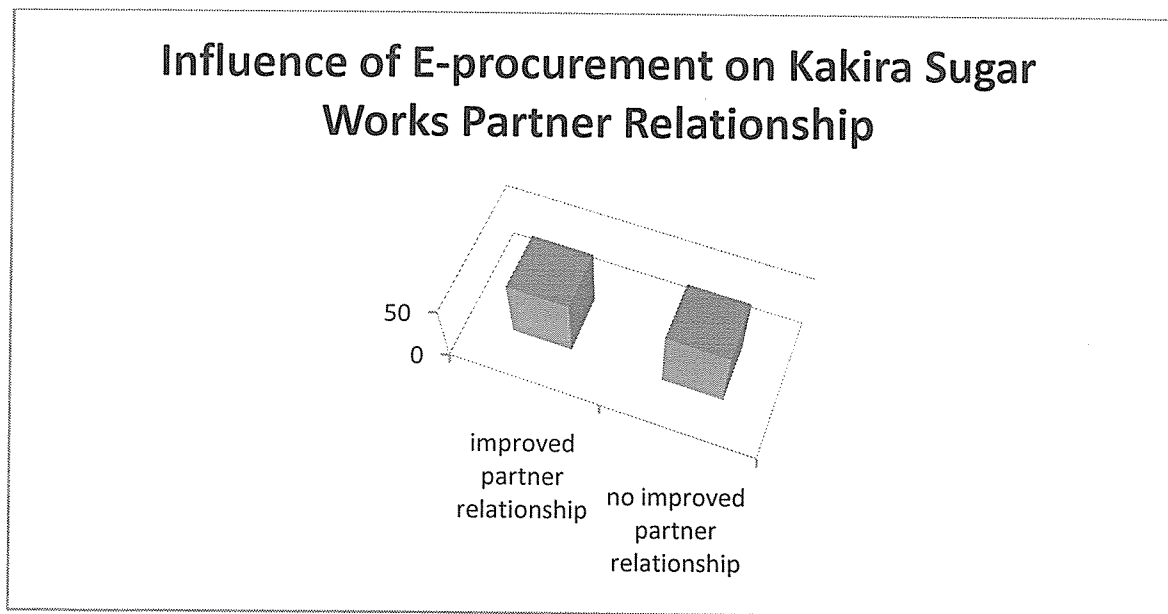
Limitations of E-procurement:

There was much hype surrounding the Internet and E-procurement over the last few years of the twentieth century. Much of it promoted the Internet and E-procurement as the panacea for all ills, which raises the question, are there any limitations of E-procurement and the Internet? Isaac Newton's 3rd Law of Motion, 'For every action there is an equal and opposite reaction' suggests that for all the benefits there are limitations to E-procurement. These again will be dealt with according to the three major stakeholders – organisations, consumers.

To consumers of Sony sugar Company;

Computing equipment is needed for Sony Sugar to participate in the new 'digital' economy, which means an initial capital cost to its customers. *A basic technical knowledge* is required of both computing equipment and navigation of the Internet and the World Wide Web. *Cost of access to the Internet*, whether dial-up or broadband tariffs. *Cost of computing equipment.* Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirement of the Internet, websites and applications. *Lack of security and privacy of personal data.* There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data. *Physical contact and relationships are replaced by electronic processes.* Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings. *A lack of trust because they are interacting with faceless computers.*

To Kakira Sugar Works as an Organisation;

There is Lack of sufficient system security, reliability, standards and communication protocols. There are numerous reports of websites and databases being hacked into, and security holes in software. For example, Kakira Sugar Works has over the years issued many security notices and 'patches' for their software. More than once, the company's procurement department employees have experienced breaches in security where 'a technical oversight' or 'a fault in its systems' led to confidential client information becoming available to all. *Rapidly evolving and changing technology*, so there is always a feeling of trying to 'catch up' and not be left behind.

The company is *under pressure to innovate* and develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organisation. The ease with which business models can be copied and emulated over the Internet increases that pressure and curtails longer-term competitive advantage.

Facing increased competition from both national and international competitors often leads to price wars and subsequent unsustainable losses for the organisation.

The problems with compatibility of older and 'newer' technology- There are problems where older business systems cannot communicate with web-based and Internet infrastructures, leading to some organisations running almost two independent systems where data cannot be shared. This often leads to having to invest in new systems or an infrastructure, which bridges the different systems. In both cases this is both financially costly as well as disruptive to the efficient running of organisations.

To local distribution of Sugar and Molasses;

Another challenge is in local distribution, which expects rapid delivery while being price-sensitive, and which normally favours surface-based transport. Roads are likely to remain the surface mode of choice because of the inherent flexibility of vehicles involved and their usage. Rail and inland water are likely to prove less adaptable to the flexible distribution of goods.

Shipping costs remain one of the biggest deterrents for Sony Sugar who are considering online purchase of physical goods. Traditional warehouse and distribution centres are not well suited to the business of ecommerce fulfilment. Newly-designed systems are needed. Lack of low-cost and efficient distribution systems are impeding the economic advantages of online shopping and it may be that traditional retailers will have to address this themselves.

Difficulties in distribution may lead to switching from high density channels such as warehouse and shopping centres to low density routes involving factory and residential areas.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 SUMMARY

In this chapter the subject of E-procurement and supply chain management has been presented in a conclusive way. E-procurement and supply chain management subjects included here are E-procurement, E-procurement and supply chain management issues, critical success factors in implementing an E-procurement system, supply chain benefits to Kakira Sugar Works of using E-procurement, E-procurement interaction with supply chain management, Internet-based EDI (IEDI) and supply chains, and e-trust and supply chains.

This chapter also presented a series of recommendations for Sony Sugar's supply chain E-procurement topics. These topical subjects include using E-procurement as a means to enhance supply chain responsiveness, e-business software supporting lean supply chain principles, integrating supply chain management in E-procurement environments, and maximizing
B2C supply chains.

In an effort to be customer focused and compete in global markets, Sony Sugar has had to re-evaluate what they do best and focus on those core operations as a strategy for procurement success. Some firms have supply chain management as a core strategy, and others do not. The non-core activities, as we found here in Chapter 5, are candidates to be improved or removed. Yet some non-core production or service operations, like supply chain distribution, have to be done by someone.

5.1 DISCUSSION

There is no one commonly agreed definition of E-procurement. Thus, there is a need to clarify terms being used and explain the context in which they are being applied at Kakira Sugar Works. E-procurement has an impact on three major stakeholders of Sony Sugar, its internal employees, the suppliers and customers (or consumers).

Impact of E-procurement to Kakira Sugar Works

There are a number of advantages which the company has enjoyed, which include cost savings, increased efficiency, customisation and global marketplaces.

There are also limitations arising from E-procurement which apply to each of Kakira Sugar Works stakeholders. These include information overload, reliability and security issues, and cost of access, social divisions and difficulties in policing the Internet. Successful E-procurement in the organisation has involved understanding the limitations and minimising the negative impact while at the same time maximising the benefits.

In order to aid general understanding of E-procurement and its impact on the company's procurement processes a number of frameworks have been introduced to explore it from different perspectives: the macro-environment, which identifies the interaction of technology, people, organisations, policy and technical standards working together to enable E-procurement; the different participants and the kind of E-procurement transactions that occur between them; and the degree of digitisation that analyses product, processes and delivery agents in an organisation.

These frameworks have helped identify the elements of E-procurement and how Sony Sugar can better understand and implement E-procurement and its practical applicability.

5.2 CONCLUSION

Kakira Sugar Works has now realized that transforming its traditional Supply Chain processes to E-procurement is not an option anymore; rather, it is mandatory in order to survive and compete in today's global e-market.

While, the transformation process to E-procurement is inevitable, it is considered to be risky and unpredictable. Therefore, substantial attention and precise planning must be well thought-out in advance to ensure a fruitful result. This paper has highlighted the importance of moving Sony Sugar Company to E-procurement and emphasized the imperative role of the organizational aspects of transformation to E-Supply Chain.

Based on an industrial case study, with respect to Sony Sugar Company, the three major aspects discussed in this paper were: change management; technology adoption and Supply Chain process reengineering. We find that by considering these organizational aspects in

great detail, the chances of successful transformation to E-procurement are significantly enhanced.

The researcher encourages Kakira Sugar Works to fully understand how E-supply chain can be of benefit to their procurement department. It suggests that purchasing and supply management professionals in the company have to ensure their organisations have a comprehensive E-procurement strategy.

Purchasing and supply management professionals of Kakira Sugar Works should evaluate e-Sourcing/e-Procurement options in order to ascertain the most appropriate solutions for their own organisation.

The researcher believes that there is nothing unethical or unprofessional about the use of information technology e.g. to facilitate e-Auctions. The ability of the company's procurement function to effect change will depend on the company's management also, the industry sector and the maturity of purchasing and supply management within its procurement functions, its resources, culture, nature of business and markets within which it operates.

E-Purchasing will impact on people, processes, and procedures as well as on financial performance of Kakira Sugar Works. The researcher strongly encourages and supports purchasing and supply management professionals of Kakira Sugar Works in their pursuit of the E-supply Chain challenge.

5.3 RECOMMENDATION

Introduction:

This study offers several theoretical implications. Results suggested that organisation and innovation characteristics, in this case, E-procurement, are successful in explaining its adoption level in Kakira Sugar Works. Findings not only offered empirical evidence to confirm the validity of E-procurement adoption, but also added to the existing literature on E-procurement adoption in Supply Chain Management. The researcher used various aspects of the findings to make recommendations for the organisation's procurement department to help it pin point areas that need improvement.

Collaboration with the government

E-procurement activity requires government support in areas such as regulation, consumer protection, taxation procedure, licensing, security, privacy and other such legally-based instruments. Kakira Sugar Works should look closely at the regulatory factors that might affect growth potential – for example security, integration with existing systems, privacy, customer relationships and taxation. Governments need to define clear policy directions and provide necessary regulatory frameworks for achieving their objectives.

Supplier Adoption

E-Procurement implementation success is closely related to early supplier involvement. It is important to demonstrate the proposed solution to the suppliers and discuss any necessary changes, issues, and concerns such as various options in developing and maintaining supplier catalogues providing opportunities for suppliers to offer their feedback will allow the public procurement department to monitor areas for improvement and adjust practices accordingly. Because many suppliers may be unwilling to conduct business electronically with public sector agencies because they are unclear about the benefits to be gained, they might see e-Procurement as a means by which public sector agencies will simply attempt to force down prices. Suppliers, therefore, should be educated on the e-Procurement benefits that can be provided to them through a process of consultation as early as possible in the project. The degree to which the success of an e-Procurement initiative can be realized may well be related to the level of e-readiness of suppliers, and appropriate communication with suppliers is therefore important.

To optimise these and other benefits, Kakira Sugar Works should focus on overall supply chain e-Procurement solutions. The researcher suggests that the most significant benefits gained (as opposed to predicted or expected) from e-Purchasing to date are improved management information, reduced cycle times and reduced transaction costs.

In order to reap the benefits of e-Purchasing, purchasing and supply management professionals of Sony Sugar should ensure that they undertake appropriate training and ensure their skills, knowledge and competencies are continuously developed. Such skills relating to e-Purchasing include wider management skills such as those involved with change management.

The researcher imagines a scenario in the future in which Kakira Sugar Works yards are fully occupied by small freight vans practising customized distribution to its consumer. The vans depart from distribution centres at Sony premises. Traffic between such distribution centres and production centres would usually be long distance but efficiently organised by large-scale cooperation and consolidation to accommodate small unit shipment.

Kakira Sugar Works **should apply the World Trade Organisation systems for liberalization**

E-procurement can only be effective for the company if the present system of trade liberalization is properly understood in letter and spirit by the procurement department staff. E-procurement can initiate a transaction where the delivery system of goods must ensure that abides the multilateral agreements of WTO and all the related issues of standardization, quality assurance, and market access. Only free flow of goods and services can ensure a truly digitalized trade liberalization system based on E-procurement and internet technologies covering all the regulatory and corporate governance issues addressing radical improvements both at the micro and macroeconomic and policy levels of a country like Kenya.

The following diagram *provides* an E-procurement implementation strategy for digital trade liberalization and facilitation.

E-procurement Implementation Strategy for Digital Trade Liberalization
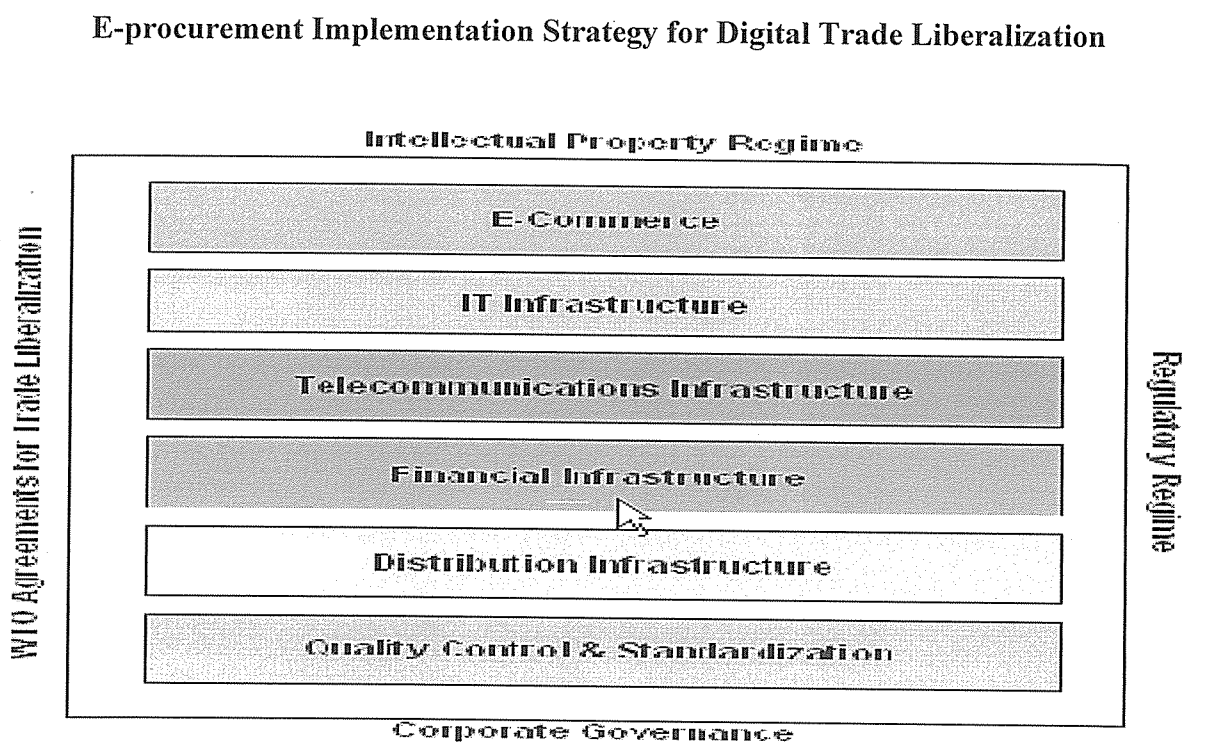
Mobilization:

Efforts should be taken by Kakira Sugar Works procurement managers in informing user population about an innovation-E-procurement. Mobilization efforts usually propagate the benefits of adopting an innovation. A population is informed via various modes such as seminars, conferences, publications and workshops. This would help the employees understand how to use the new technologies and their advantages to their Supply Chain process.

Critical Success Factors in Implementing an E-procurement System that Kakira Sugar Works *must consider:*

Gide and Soliman (1998), who studied success factors for the implementation of E-procurement, identified ten critical success factors for the implementation of E-procurement in manufacturing:

1. Management commitment and support for E-procurement (e.g., financial, time, etc.)

2. Organizational and management objectives for E-procurement (i.e., aligning them and defining them)

3. Communication between users and E-procurement department (i.e., improving interface)

4. E-procurement system security and reliability (i.e., reducing security risks and ensuring useful, timely, and accurate information)

5. E-procurement department's service function (i.e., defining the role of E-procurement in providing services to the firm)

6. Integrating E-procurement into existing business functions (i.e., utilizing existing software platforms and fully integrating E-procurement systems to take advantage of communication capabilities)

7. Change management for E-procurement system implementation (i.e., utilize change management methodologies to ready the organization for the implementation of the E-procurement system)

8. Appropriate E-procurement system applications (i.e., build an E-procurement system around needed organizational goals and objectives)

9. User participation and satisfaction for E-procurement implementation (i.e.

Like e-procurement, users will be in a better position to make suggestions on implementation, based upon their potential satisfaction using the system.)

10. Technological competence for E-procurement implementation (i.e., A firm must have technically competent technology staffers to answer implementation questions and avoid constraints in the implementation process.)

5.4 CONCLUSION

In conclusion it can be said E-procurement, as a means of virtual organising has become a central part of a commercial drive towards systemic innovation and the re-evaluation by many of value creation. A major shift in the communications between business organisations is taking place, which has actually redefined Kakira Sugar Works and its commercial transactions. E-procurement has become a key element in moulding and propelling business into new directions in the traditional market place and emerging market-space. Sony Sugar Company, in particular, with E-procurement is showing unprecedented levels of integration across its Supply Chain in the pursuit of both process and product innovation for E-procurement.

5.5 LIMITATIONS AND FUTURE RESEARCH
LIMITATIONS

The greatest strength of this study also contributes to its greatest limitation, that is, its inductive/qualitative approach and use of interviews. This was a qualitative study relying primarily on 24 participant interviews as data. The study has demonstrated how conceptually rich interpretations yielding theoretical relationships can be obtained through such methods. In terms of the scientific method, this study was inductive in nature, designed to build theory.

The use of one-on-one interviewing also creates limitations for this study. There exists the potential for interviewers to affect the nature and quality of participants' responses. Strength of depth interviews is their reliance on well trained interviewers as research instruments.

At the most limited level, this study's findings can be generalized to the study participants, assuming that the interpretations that span all 24 participants partially describe each individual's past experiences. Member checks were used to examine this level of generallizaility. This study's findings depict perceptions of the E-procurement environment and its impact on supply chain processes, which apply to similar kinds of companies within E-procurement. However, this level of generallizaility cannot be stated from this study alone due to the sampling method and sample size.

5.5.1 FUTURE RESEARCH

The study presented opens the door for future research to expand these findings. As a first step, the dimensions of E-procurement and their impact should be examined in greater depth by extending the sample to a larger number of firms to gain a richer understanding of the phenomenon. For example, does the impact on supply chain management differ based on the length of time in E-procurement? This study examined the phenomenon from the single-firm point of view. It would be interesting to explore the effect of E-procurement on supply chain relationship management from a dynamic perspective or perhaps an extended supply chain. Are other supply chain members' experiences the same as or different from those evaluated? Do factors such as company size, position in the supply chain, or characteristics of other firms in the supply chains play a role in the impact? These and other potential moderating or mediating factors should be included in the theory.

5.6 SUMMARY

In this study the subject of E-procurement and supply chain management has been presented. E-procurement and supply chain management subjects included were E-procurement, E-procurement and supply chain management issues, critical success factors in implementing an E-procurement system, supply chain benefits of using E-procurement, E-procurement interaction with supply chain management, Internet-based EDI (IEDI) and supply chains, and e-trust and supply chains. This chapter also presented a series of challenges in supply chain E-procurement topics

REFERENCES

Agatz, N. A. H., Fleischmann, M. and van Nunen, J., E-fulfillment and Multi-channel Distribution — A Review. *European Journal of Operational Research*, Vol. 187, No. 2, 2008, pp. 339–356. Attwood, R., E-com Coming. *Supply Management*, July 30, 1998, pp. 37–38.

Argyris, C. et al, 1985, *Action Science: Concepts, Methods and Skills for Research and Investigation*, Jossey-Bass Publisher, San Francisco, CA, 480pp.

Avison, D.E. et al, 1999, 'Making Academic Research More Relevant', *Communications of the ACM*, Vol.42, No.1, pp.94-97

Baca, Rudy. 2000. "The Building Blocks of Growth in the 'New Economy': A Guide to Global Investment Precursors in Telecom, Internet, and E-procurement." Legg Mason Precursor Group, Baltimore.

Balasubramanian, S. and Mahajan, V., The Economic Leverage of the Virtual Community. *International Journal of Electronic Commerce*, Vol. 5, No. 3, 2001, pp. 103–123.

Barber, N. F., Will EDI Survive? *Transportation & Distribution*, September 1997, pp. 39–45.

Barber, N. F., Will EDI Survive? *Transportation & Distribution*, September 1997, pp. 39–45.

Barrat, M. (2004). Understanding the meaning of collaboration in the supply chain. *Supply Chain Management: An International Journal*, 9 (1), 30-42.

Barratt, M. A. "Understanding the Meaning of Collaboration in Supply Chain," *Supply Chain Management: An International Journal* (9:1), 2004, 30-42.

Barratt, M., & Oliveira, A. (2001). Exploring the experiences of collaborative planning: The enablers and inhibitors. *International Journal of Physical Distribution & Logistics Management*, 31 (2), 266-289.

Baskerville, R. et al, 2000, *A Critical Perspective on Action Research as a Method for Information Systems*, in Avison, D. and Myers, M., *Qualitative Research Methods in Information Systems*, London, Sage Publications, 312pp.

Bay, B., Tang, N., & Bennett, D. (2004). An empirical study of the imperatives for a supply chain implementation project in Seagate Technology International. *Supply Chain Management*, 9 (4), 331 –340

Booz·Allen & Hamilton, eInsights 2001. "Windows into the Future: How Lessons from Hollywood Will Shape the Music Industry"

Bourassa, Richard June 2001. Director, International Policy Electronic Commerce Branch Industry Canada. Presentation to WTO/CTD Seminar on E-procurement. "Global E-procurement: Enablers and Barriers"

Bridges, W, 1995, *Managing Transitions, Making the most of change*, Nicholas Brealey Publishing, Great Britain, 140pp.

Burn, J. M. and Loch, K.D., 2001, The societal impact of the world wide web-key challenges of the 21st century, *Information Resources Management Journal,* Vol. 14, No. 4, pp. 4-14

Business Review, March-April, pp. 93-103.

Butler , Steve 2001. Senior Analyst, B2B eCommerce. "The Ecommerce B2B Report". http://www.emarketer.com

Cachon, G. P. and Fisher, M., Supply-chain Inventory Management and the Value of Shared Information. *Management Science*, Vol. 45, No. 8, 2000, pp. 16–24.

Cassivi, L. "Collaboration Planning in a Supply Chain", *Supply Chain Management: An International Journal*, (11: 3), 2006, 249-258.

Chakrabarty, S., Whitten, D. and Green, K.W. "Understanding Service Quality and Relationship Quality in IS Outsourcing: Client Orientation & Promotion, Project Management Effectiveness, and the Task-Technology-Structure Fit," *Journal of Computer Information Systems* (48:2), 2007, 1-15.

Chen, F., Drezner Z., Ryan J. K. and Simchi-Levi D., Quantifying the Bullwhip Effect in a Simple Supply-chain: The Impact of Forecasting, Lead Times, and Information. *Management Science*, Vol. 46, No. 3, March 2000, pp. 436–443.

Choi *et al.*, the *Economics of Electronic Commerce*. Macmillan Technical Publications, 1997, p. 18.

Chopra, S. and P. Meindl (2001). Supply Chain Management: Strategy, Planning, and Operations. Upper Saddle River, NJ: Prentice Hall.

Chuang, M.-L. and Shaw, W. H., A Roadmap for E-Business Implementation. *Engineering Management Journal*, Vol. 17, No. 2, 2005, pp. 3–13.

Deans, P. C. and K. R. Karwan, Eds. (1994). Information Technology and Leadtime Management in International Manufacturing Operations. Global Information Systems and Technology: Focus on the Organization and Its Functional Areas. London, Idea Group Publishing.

Deitel, H. M., Deitel, P. J. and Nieto, T. R., *E-Business & E-procurement: How to Program*. Prentice Hall, Upper Saddle River, NJ, 2001.

Deitel, H. M., Deitel, P. J. and Nieto, T. R., *E-Business & E-procurement: How to Program*. Prentice Hall, Upper Saddle River, NJ, 2001.

Elden, M. and Chisholm, R.F., 1993, 'Emerging Varieties of Action Research: Introduction to the Special Issue', *Human Relations*, Vol. 46, No. 2, pp. 121-42

Fairchild, A. M. and Peterson, R. R., 2003, Business-to-Business Value Drivers and eBusiness Infrastructures in Financial Services: Collaborative Commerce across Global Markets and Networks System Sciences. *Proceedings of the 36th Hawaii International Conference*

Flurry, G. and Vicknair, W., 2001, The IBM Application Framework for e-business, *IBM Systems Jnl.*, Vol.40, No.1, pp 8-24

Management Review, Fall, pp.33-47

P. Timmers, *Electronic Commerce – Strategies and Models for Business-to-Business Trading.* John Wiley & Sons, 2000.

Tushman, M. L., & Anderson, P. 1986. Technological Discontinuities and Organisational Environments. Administrative Science Quarterly, Vol. 31.

V. Zwass, 'Structure and macro-level impacts of electronic commerce: from technological infrastructure to electronic market places'; http://www.mhhe.com/ business/mis/ zwass/ ecpaper.html (accessed May 2001).

Venkatraman, N. & Henderson, J.C. 1988. Real Strategies for Virtual Organizing. Sloan

Watson, R.T., Akselsen, S., Pitt, L.F. 1998. Building Mountains in the Flat Landscape of the

Whitten, J. L. and Bentley, L. D., *Introduction to Systems Analysis and Design.* McGraw Hill/Irwin, Boston, MA, 2008.

Womack, J. P. and Jones, D T. 1994. From lean production to the lean enterprise', Harvard

Womack, J. P., D. T. Jones and D. Roos. 1990. The Machine that Changed the World. Macmillan International, New York, USA.

World Wide Web. Californian Management Review, Winter, pp.36-56.

APPENDICES
APPENDIX I: RESEARCH QUESTION
QUESTIONNAIRE TO THE RESPONDENTS

Dear Respondent

The following are designed with an aim of establishing a baseline set of responses to help the researcher to "**assess the impact of e-procurement on supply chain processes a case study of** Kakira Sugar Works". The researcher is a student of Kampala International University and promises confidentiality to all information collected and all views be upheld and applied to the respondents, please feel free to participate.

Questionnaires asking specific questions will be used to collect data with regard to the adoption of e-procurement in Sony Sugar Company's procurement department. This is attached after the few following pages.

INSTRUCTIONS

1. Kindly answer all questions

2. Your response will be treated as confidential reports and used for the purpose of research only

3. Tick and give explanation where necessary please

SECTION A

BIO-DATA

1. Gender   Male ☐   Female ☐

2. Age range

      (25-30) ☐

      (45– 50) ☐

      (50 – 55) ☐

      (60 – 65) ☐

      (70+) ☐

3. What is the highest educational level have you attained?

      (a) P 8 and below ☐

      (b). O- Level ☐

      (c) A- level ☐

      (d) University level ☐

4. Duration of work

1month – 1 year ☐

2 – 3 years ☐

4 – 5 years ☐

6 years and above ☐

5. Are you trained in E-procurement?

YES ☐   NO ☐

6. Do you understand what supply chain is?

YES ☐   NO ☐

SECTION B: Questionnaire for both employees and managers

1. How wide is your supply chain?

....

....

....

....

....

2. Has your organisation been able to adopt new levels of e-procurement?

a) Yes ☐   b) No ☐

3. How has the procurement department adopted new levels of E-procurement?

....

....

....

....

....

4. How has E-procurement transformed your organisation's internal supply chain?

....

....

....

....

....

5. What are some of the advantages of e-procurement that your company has enjoyed?

....

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6. How would you describe the current uses and potential benefits of E-procurement to your procurement department?

....

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....

8. What are the major challenges that your company must overcome to succeed in e-procurement?

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11. How do your suppliers relate with the level of E-procurement applications in your procurement processes?

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12. Has your supply chain involved the following forms of E-procurement?
(*Tick if yes*)

- Electronic Maintenance Repair and Operations (e-MRO) ☐
- Electronic Data Interchange (EDI) ☐
- E-Sourcing ☐

- E-revenue auctioning ☐
- E-informing ☐

13. The information gathering stage is deemed necessary when there is no established relationship with suppliers. How has E-procurement and information gathering affected your supply chain?

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14. Do you use E-procurement in making supplier contact?

a) No we don't ☐   b) At times, but in other contracts we don't. ☐   c) Yes we do ☐

15. Apart from face-to-face contact, has E-procurement been useful for your procurement department in negotiating for collaborative relationship with your suppliers?

a) Greatly ☐   b) Moderately ☐   c) Not at all ☐

16. Which of the following initiatives of E-procurement has your supply chain managers adopted? *(Tick the option that is adopted)*

E-catalogue ☐   Notification ☐
E-ordering ☐   E-invoicing ☐
E-tendering ☐   E-awarding ☐
E-contracting ☐

17. How are all the partners in you supply chain (shippers and logistics service providers) influenced by E-procurement adoption in your system?

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18. Briefly state the limitations of E-procurement in the following aspects:

a) Your organisation (Sony Sugar Company)

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b) Your customers

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d) Your local distribution function of sugar, manure and molasses

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Thank you for your valuable time and response.

APPENDIX II

ACTIVITY PLAN OF SCHEDULES

S/NO	ACTIVITY	TIMING
1	proposal writing and approval Research titles	May 2013
2	Developing Research proposal	June-July 2013
3	Data analysis, report writing and approval of the proposal	August 2013
4	Data collection, analysis and report writing	September 2013
5	Review of first draft and making corrections	September 2013
6	Making corrections and developing First draft	September- October 2013
7	Collection and marking of complete SSP reports	$20^{th} - 22^{nd}$ November 2013
8	Submitting copies to the relevant school department for marks	November 2013

APPENDIX III

BUDGET

ITEM	ESTIMATES (Ugandan Shillings)
Writing materials	20,000
Communicating expenses	25,000
Lunch and transport	100,000
Printing and photocopy	100,000
Miscellaneous	15,000
TOTAL	**260,000**