**The Impact of E-procurement On Strategic Sourcing A Case Study: CBZ Bank Limited, Zimbabwe**

**A Research Report**

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**by**

**DAISY.D.CHIPIRO**

**Student No:71364048**

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# Abstract

**Purpose** – The purpose of this paper is to examine the factors influencing E-procurement adoption in CBZ Bank, Zimbabwe (hereinafter referred to as CBZ Bank) and its impact on the bank's strategic sourcing, and enhance understanding of the impact of E-procurement on strategic sourcing. The study will investigate the key elements of the impact of E-procurement on strategic sourcing which include: strategic elevation of the procurement function, information sharing benefits of implementing E-procurement and current procurement practices. The study will also investigate the impact of Internet on the procurement function through E-procurement and consequently on the strategic sourcing of the Bank. With ever-increasing competitive pressures, growing numbers of firms use electronic procurement (E-procurement) in an attempt to reduce costs and increase profitability. Academics and practitioners alike agree that one of the most important benefits of E-procurement is its ability to facilitate integration within the firm and across the supply chain.

**Literature review** - Theoretical considerations and empirical literature review will be undertaken to identify the key elements of the impact of E-procurement on strategic sourcing. This will be followed by a statistical analysis of key elements of E-procurement utilising data from the organisation.

**Design/methodology/approach** – This paper reports on a case study of E-procurement in CBZ. A three stage methodology is adopted – a case study of CBZ, a questionnaire survey of CBZ, and interactive interviews with management in CBZ. The research is a case study analysis of the impact of E-procurement on strategic sourcing in CBZ a leading financial institution in Zimbabwe.

**Findings** – Findings from statistical analysis confirms the maturity level of an organisation influences the uptake of E-procurement to compliment its strategic sourcing processes. Cost and strategic factors dominate E-procurement drivers and technical issues dominate E-procurement barriers. The key success factors of E-procurement and strategic sourcing reflect the need to infuse internal change management processes, principally upper management support. The results of the survey show a cautious approach and hesitation in regard to implementation of E-procurement within the organisation, probably because the technologies for inter-based procurement systems are still in the emerging or developmental stage.

**Research limitations/implications** – This research focuses on CBZ, a leading commercial bank within the financial services industry in Zimbabwe. This could have implications for other complex systems within organisations such as the public sector, or multinational companies considering implementing E-procurement with suppliers in developing countries. The study will show the research methodology, design, and data analysis and how it will contribute to the body of knowledge. The population for the study will be a random sample comprising the Bank's management and employees, located in Head Office and at least 30 Branches of the bank. The researcher will use primary data and secondary data which include observations, in-depth interviews, questionnaires, e-mail, Bank's procurement manuals, the Bank's financial statements and the Bank's strategy as methods of collecting data to enhance response rate for the survey. Questionnaires will be administered to bank employees and management. Based on extensive literature review and previous empirical studies, a research framework addressing strategic as well as operational issues will be developed and the resulting hypotheses empirically

tested. The research will conclude with results, managerial implications, limitations and recommendations for now and future research.

**Practical implications** – E-procurement needs to be considered in the context of other procurement policy objectives. What may be good E-procurement practice in one organisation may be viewed as competing with broader policy objectives of other organisations.

**Originality/value** – Much research on E-procurement has been conducted in the public sector of European and Asian countries and this paper contributes to the small but growing number of studies of E-procurement in the context of the private sector in Africa by studying the impact of E-procurement on strategic sourcing in CBZ.

**Keywords** - E-procurement, Strategic Sourcing, Procurement, services industry, CBZ Bank, Zimbabwe.

**Paper type** - Research paper.

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# Declaration

The researcher certifies and declares that, other than where elsewhere noted, the entire body of this research is the researcher's own work, and that all references used have been accurately reported. The research is being submitted in partial fulfilment of the requirements for the degree of Master of Business Leadership at the Graduate School of Business Leadership, UNISA and has not been submitted before, in whole or in part, for any degree or examination at any university.

DAISY CHIPIRO

Signed:   Student Name

Date:     01 December 2009

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No one who achieves success does so without acknowledging the help of others. The wise and confident acknowledge this help with gratitude.

*Alfred North Whitehead.*

To God be the glory!!

I am greatly indebted to a number of organisations and people without whom this research would have not been accomplished;

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## List of Acronyms

| | |
|---|---|
| ATP | Available to Promise |
| B2B | Business –to-business |
| B2C | Business-to-Consumer |
| BCCIH | Bank of Credit and Commerce International Holdings Limited |
| BCCZ | Bank of Credit and Commerce Zimbabwe Limited |
| BPM | Business Process Modelling |
| BPR | Business Process Re-engineering |
| BPS | Business Process Simulation |
| CSO | Central Statistical Office |
| d.f | Degrees of freedom |
| EC | Electronic Commerce |
| EDI | Electronic Data Interchange |
| EFT | Electronic Funds Transfer |
| E-mail | Electronic Mail |
| EMS | Electronic Market System |
| E-procurement | Electronic Procurement |
| ERP | Enterprise Resource Planning |
| EXCO | Executive Committee |
| FAQ | Frequently Asked Questions |
| GePS | Government E-procurement Systems |
| HKTAIGA | Hong Kong Textile Apparel Industry Global Application |
| ICT | Information and Communication Technology |
| IDC | International Data Corporation |
| IS | Information Systems |
| ISM | Institute for Supply Management |

| | |
|---|---|
| IT | Information Technology |
| KSF | Key Success Factors |
| LAN | Local Area Network |
| MNE | Multinational Enterprise |
| MRO | Maintenance, Repair and Operations |
| MRP | Manufacturing Resource Planning |
| MS | Microsoft |
| NAPM | National Association of Procurement Managers |
| NECCC | National Electronic Commerce Coordination Council |
| NOIE | National Office Information Economy |
| OECD | Organization for Economic Co-operation and Development |
| OFS | Oracle Financial Services |
| PEPPOL | Pan-European Public Procurement On-Line |
| PWC | PriceWaterhouseCoopers |
| R&D | Research and Development |
| ROI | Return on Investment |
| SaaS | Software-as-a-Service |
| SIC | Standard Industrial Classification |
| SMEs | Small to Medium Enterprises |
| SPSS | Statistical Package for the Social Sciences |
| SSC | Shared Service Centre |
| SWOT | Strengths,Weaknesses,Opportunities and Threats |
| UK | United Kingdom |
| UNCTAD | United Nations Conference on Trade and Development |
| USA | United States of America |

| | |
|---|---|
| USD | United States Dollar |
| VAN | Virtual Area Network |
| Y2K | Year 2000 |
| ZSE | Zimbabwe Stock Exchange |
| ZWD | Zimbabwe Dollar |

# CHAPTER 1: ORIENTATION

## 1.1   Introduction

Organisations are increasingly doing e-business using information and communication technologies and the internet. This study explores the uptake of a particular form of e-business, that of E-procurement. E-procurement has been defined as the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services (Wu; Zsidisin & Ross, 2007).

The study is conducted on CBZ Bank Zimbabwe (hereinafter referred to as CBZ Bank) and investigates the issues, influences and impacts associated with E-procurement adoption on the Bank's strategic sourcing .This study aims to investigate the influences, issues and impacts of E-procurement adoption in CBZ Bank Zimbabwe, and to consider how complex policy objectives and E-procurement correlate in a commercial bank context. CBZ Bank is concerned with achieving value for money in the way it procures goods and services, but has other policy objectives as well.

With increasing competitive pressures, supply chain management professionals must continually find ways to reduce costs, increase efficiency, and reduce lead time. How does today's supply chain management professional accomplish all of this? Increasing numbers of firms use E-procurement in an attempt to enhance these key business outcomes. This comes as no surprise, given one of the key competitive priorities for the 21st century is the maximization of Internet-based technologies such as E-procurement (Monczka and Morgan, 2000).

The traditional market of electronic commerce (EC) was founded in the 1990s along with the rapid growth of the Internet. By 1991, EC was mainly supported by five basic facilities: electronic mail (e-mail), enhanced fax, electronic data interchange (EDI), transaction processing, and groupware; by 1995 EC began to mature with the emphasis of security with a variety of secure transaction processing services. In the 21st century, EC has become a very hot topic in both the research and business areas, and, among the many definitions of EC, it can be summarized as the buying and selling activities of information, products, and services via computer networks. It has been an increasing trend for companies to migrate their businesses onto the Internet. What are the reasons for the individual companies to invest such a vast amount of time and money into this new business strategy? Is it because they want to sell on the Internet in order to increase sales, or are they just following it as a competitive business norm to establish their visibility in the electronic market?

With whatever reasons they bear, companies are gradually moving their procurement functions such as sourcing, negotiating with suppliers, and coordination with research and development (R&D) onto the Internet. In other words, they are trading in an electronic fashion. Thus, the term electronic procurement (E-procurement) was recently invented to describe these activities that are taking place in the electronic market. E-procurement results in greater control and flexibility along with cost savings in the procurement operations and provides suppliers with the ability to become more proactive in the way they do business. Moving procurement onto the Internet is not yet mature, although many researchers already paid attention to this area some years ago. When this idea becomes mature, the whole

procurement process may be automated electronically, or some may be minimized, merged together, or even transformed into other processes (Yen and Ng, 2003).

The competition of today's global marketplace is driving companies to reshape their supply-chain to reduce overall cost and eliminate inefficiencies. Procurement is the primary point of contact with most supply-chain partners. The decisions (also, performance) taken at the procurement stage can have a great impact on the overall supply-chain and production planning processes. As a result, many organisations are attempting to redesign and streamline their procurement processes. Over the years, a number of researches have been done in this area by industry and academics: just-in-time procurement (Waters-Fuller, 1995, ) (Ng, Ferrin & Pearson, 1997) ( Kelle and Miller, 1998); collaboration/integration between buyers and suppliers (Stuart and McCutcheon, 1996) (Dowlatshahi, 1998) (De Toni and Nassimbeni, 1999) (Industry Directions, 2000) (Narasimhan and Das, 2001); supplier rating (Wilis, Huston & Pohlkam, 1993;  Li, Fun & Hung, 1997; ) (Muralidharan, Anantharaman & Deshmukh, 2001); vendor management inventory (Kaipia,Holmstorm & Tanskanen , 2002); vendor structure framework (Chakraborty and Philip 1996).

Among those researches, collaboration/integration techniques between enterprises are getting more attention from researchers since those are fundamental techniques for internet-based procurement and e-Commerce solutions. It is considered that collaboration/integration could provide: a decrease in inventory and safety stock; a reduction in stock-out and improved service level; improvements in forecast

accuracy between partners; an increase in sales. A collaborative and integrated procurement environment is also a prerequisite for the strategic procurement.

Strategic procurement is a critical business function that comprises a set of cross-organisational business processes and is directly involved in a company's value proposition, influences the choice of core competencies to maintain internally and facilitate a company's ability to innovate (Makatsoris; Markopoulos,& Lampropoulos, 2001). It targets at building relationships with a company's suppliers and sometimes with their suppliers' suppliers, to work together as one virtual organisation to best serve the end-customer's specific needs and flexibly respond to prevailing market conditions.

Aberdeen analysis (Aberdeen Group, 1999) concludes that to optimize support for strategic procurement and supply-chain management activities, internet-based E-procurement automation must comply with the following criteria:

- Support complete requirements of production and non-production procurement through a single internet-based, self-service system
- Deliver a flexible catalogue management strategy that can meet the needs of an individual buying organisation and its supply-chain
- Provide tools for extensive reporting and analysis
- Support strategic sourcing activities
- Enhance supply-chain collaboration and coordination with trading partners.

Financial institutions have been noted to have been among the earliest users of computers, hence their tendency to have a competitive edge.  One of the most significant developments of the 1990s in the globalizing economy is the identification

of the service industries as the fastest increasing component of multinational enterprise (MNE) activity in both developing and developed countries (Dunning, 1993). "Specialised MNEs services" such as telecommunications, banking, airlines, insurance, transportation, and business services (law, accounting, etcetera) have been historically protected from both domestic and foreign competition by regulation (Mester, 1994).

The emergence of the Internet is eliminating the boundaries that once separated corporations and countries. Commerce that once took place in local or regional markets now occurs seamlessly across most borders (KPMG, 1999). Bill Gates, CEO of Microsoft, has often been quoted as saying "The Internet changes everything" (Gates, 1999). Many technologists have likened the growth of electronic business to the industrial revolution of the nineteenth century as it is transforming most aspects of communications, the service related aspects of manufacturing and commerce (Taylor, 1999a). Nathan Myhrvold, Microsoft's Chief Technology Officer has been quoted as saying that "The Web will fundamentally change customers' expectations about convenience and service" (Taylor, 1999b). As the number of online consumers grows, the opportunity to conduct business-to-business (B2B) and business-to-consumer (B2C) services grows consistent with Metcalfe's law; the value of the network is equivalent to the square of the number of nodes connected to it.

Information technology and the Internet in particular, are causing fundamental changes in the economics of service industries as new network based global e-commerce business models emerge and begin to dominate. The World Wide Web empowers customers and provides them with the information and the medium to

convert intentions into purchases. It also raises customers' expectations about speed, comparability and price. Service firms that are willing and able to rethink their business model, at a minimum taking into account how information technology changes the business environment, will get to the future first (Wymbs, 2000).

Within the last ten years, the lowly, back-end procurement process has been transformed into a strategic resource. Procurement is now seen not only as a strategic player in the value chain, but as a major driver in the extended supply chain. There are many reasons for its popularity. Specific drivers may be traced to such areas as trends in global sourcing, emphasis on time to market, product quality based competition, customer uncertainty and the need to improve bottom-line costs (Kalakota and Robinson, 2001).

The procurement process has become a costly activity for businesses over the years, often involving slow manual business procedures and even slower systematic processes for handling procurement transactions. At the same time, procurement officers were forced to handle errors in ordering, costing and invoicing; which were often time consuming and costly to trace. Thus, top management in organisations have begun to take an active interest in the procurement process. According to Kalakota *et al.* (2001), the purchase of goods and services represents the single largest cost item for any given enterprise. It is estimated that for each dollar a company earns on the sale of a product, it spends about $0.50 to $0.60 on goods and services.  Further, more capital is spent on the purchase of materials and services to support the business's operations than on all other expense items combined (Kalakota *et al.* 2001).

Historically, businesses realised time and cost savings by linking with major suppliers through private networks, such as electronic data interchanges (EDIs). Consolidating the purchase process with a few key suppliers capable of providing volume discounts can generate tremendous cost savings. Until recently, most global firms operated domestic accounts, such as payroll, procurement and logistics systems in every country in which they operated. The Internet has now enabled global firms to centralise these functions (NOIE, 2000a).

The intensive adoption of information technology within the processes of industrial companies dates back to the 1960s with the first application of EDI (electronic data interchange) protocols, followed by the rapid diffusion of EFT (electronic funds transfer), telemarketing, telebanking systems. The adoption of these systems at different levels of commercial relations between companies has given them the opportunity to gain substantial reductions of transactional costs along the logistics chains. The advent of the e-Age in the last decade undoubtedly represents a further opportunity to improve the efficiency and effectiveness of industrial relations.

The internet and all the related net applications are not only cost-facilitator devices. Rather, unlike proprietary EDI systems, their main envisaged property resides on their open-source architecture and the possibility to embrace not only the transactions processes but also the internal supply and planning processes of the enterprises along a logistics chain, without the need to adopt common operating systems or share the same databases. Given the strong impact business to business (B2B) applications exert on company strategies and on the modus operandi of the

organisations, the implementation projects are complex and need to be managed. A clear disillusion has heavily affected many companies due to significant mistakes experienced in the application of B2B in their organisation. These drawbacks are mainly due to the rushing adoption and acquisition of B2B applications, believing that they would have acted as tools for automating processes that already exist, rather than real opportunities for modifying the business strategy.

In particular, as far as E-procurement solutions are concerned, according to the procurement magazine of the USA, NAPM, nowadays 70% of American buyers make intensive use of internet applications in their working activities. These figures will be likely the same also on the European side. Yet, the internet does not represent an infallible solution for redesigning a fragmented procurement system.(Peleg; Lee & Hausman, 2002)

Increased competition, new technologies, and rapidly changing global markets are forcing businesses to identify strategies for continuously improving their productivity and cost management. Web-based procurement emerges as a powerful strategy to attain these goals. For example, Digital Buyer, a solution developed by Digital Market Inc. (now part of Agile Software), offers a comprehensive enterprise application suite for Internet-based sourcing and supply chain optimization for direct materials. By facilitating quote and order transactions, Digital Buyer helps manufacturers speed new products introduction to boost product revenue and enhance customer satisfaction, while at the same time, cut direct material costs to improve profits (Fox; Mackenzie; Walburger & Wood, 1999).

Research conducted by Aberdeen Group indicates that early adopters of E-procurement strategies have realised significant reductions in procurement costs, with most user organisations realising a return-on-investment of greater than 300% in Internet procurement automation within the first year of deployment (Weil, 2000a). E-procurement solutions help buyers to reach a large number of potential suppliers and thus negotiate better contract pricing. In addition, automating direct procurement reduces the cycle time, making a manufacturer or service provider more responsive to the market. Given the low vendor search cost, implementing an E-procurement strategy is likely to result in higher profits. A recent survey conducted by Deloitte Consulting in developed countries, reports that more than 90% of businesses indicate that E-procurement is a part of their on-going business plan, with more than 30% having already implemented this new capability to some degree(Aberdeen Group,2001) (Weil, 2000b).

While the management of information flows has always been a key aspect of supply chain management, the rapid growth of web-based information transfer between companies, their suppliers, and their customers has decidedly increased the importance of information management in creating effective supply chains. Indeed, the Internet has emerged as a most cost-effective means of driving supply chain integration.  E-business is defined as the marriage between the Internet and supply chain integration. This marriage is transforming many processes within the supply chain from procurement to customer management and product design (Johnson and Whang, 2002).

E-procurement, the electronic support of the professional buying process, which addresses the relationships of a business with its suppliers, has gained increased attention in academic work in recent years (Carter and Monczka, 2005) (Crossgate, 2007) (Nagle; Finnegan & Hayes, 2007) (Palma dos Reis and Soares Aguiar, 2006) (Williams and Hardy, 2007).

Around the year 2000, online marketplaces, reverse auctions and desktop procurement systems were among the various E-procurement-related topics of interest (Eyholzer, 2002) (Segev; Gebauer & Faeber, 2000). Now that the euphoria surrounding e-business has abated, more research is needed on the successful use of E-procurement systems (Knudsen, 2003).

As a major part of supply chain management (Leenders and Fearon, 1997) (Monczka Trent & Handfield, 1997), supply chains in procurement are traditionally supported by information technology. With the implementation of enterprise resource planning (ERP) or manufacturing resource planning (MRP) systems in the 1980s, electronic data interchange (EDI) connections with suppliers were established. For example, close partnerships have been forged with direct material suppliers through the automation of delivery schedules by linking a company's materials management system with supplier systems.

Since the mid-1990s companies have also been redesigning their relationships with business partners for indirect procurement. Traditionally, ERP systems have been applied to products with high transaction volumes and direct implications for value-adding processes. As a consequence, we still find paper-prone and labor-intensive

processes for indirect procurement that harbor large inefficiencies. The diffusion of E-procurement systems in the late 1990s has created the potential for re-organising the maintenance, repair and operations (MRO) supply chains. Compared to ERP, these systems were considerably less expensive and more flexible due to increased standardization on a technical level.

More or less all studies on E-procurement report large efficiencies regarding process and procurement costs (Gebauer and Segev, 1998). The main idea of E-procurement is to include the end-user (requester) in the procurement process via an electronic multi-vendor catalog and to close the process gaps (for example, re-entry of data) in the supply chain for indirect goods (Neef, 2001). A third phase of development in E-procurement has also been observable with the integration of electronic markets (e-markets) in the supply chain since the end of the 1990s (Poirier and Bauer, 2000). These e-markets evolved alongside the early system vendors like Ariba, Commerce One or SAP and support the outsourcing of operational procurement functions, offering tools for auctions and requests for quotations.

This research paper is structured as follows: First, the research context of the CBZ Bank is described, and how procurement and supply is organised amongst its branches. Secondly, theoretical considerations and literature reviews are presented that consider current use and benefits of E-procurement, and identifies factors influencing e-adoption in organisations. Subsequently, the methodology is described. Findings from a questionnaire survey, in depth case study and an interactive interview session are provided. Conclusions are drawn that are relevant

to CBZ Bank and the banking industry especially in Zimbabwe and other developing countries.

## 1.2   Purpose/ Objectives of the study

The purpose of this research was to develop a better understanding of the impact of E-procurement on strategic sourcing in CBZ Bank. The primary objective will be pursued through a series of questions and interviews designed to help provoke the respondents' perceptions and seek responses to issues pertaining to the current and future procurement practices taking place within the CBZ Bank and to ascertain their perceived drivers and barriers of E-procurement, by providing answers to the research questions.

The study presented in this research paper was initiated by the researcher who had specific questions regarding the E-procurement maturity of CBZ Bank Zimbabwe. To achieve this there is need to establish:

- The role of Procurement within CBZ Bank, is procurement an issue worth the attention of upper management
- The status of the Procurement function within CBZ Bank
- The current use of internet-based technologies of the sample organisation
- The E-procurement drivers and barriers of the sample organisation
- Key success strategic sourcing factors and E-procurement key success factors
- The reasons to implement E-procurement in the presence of strategic sourcing
- If CBZ Bank is ready to implement E-procurement

## 1.3    Statement of the problem and sub-problems

> **What role and impact does implementation of E-procurement have on CBZ's Strategic Sourcing processes?**

The purpose of this research is to establish the impact of E-procurement on strategic sourcing in CBZ Bank, and if the bank is ready to implement E-procurement to complement its strategic sourcing activities. In addition there is need to further establish what factors must be evaluated and what are the relative weights of these several factors in assessing the impact of E-procurement on strategic sourcing in CBZ Bank.  Does the shift to E-procurement mean that procurement organisations can experience savings in their procurement function?

Major changes are currently taking place globally within procurement functions of informal and formal business entities.  The role of procurement has changed considerably due to advances in information technologies and information systems. significant gaps currently exist in our understanding of the role of procurement in our organisations today.  As organisations become increasingly involved in cost reduction projects, the impact of procurement has become evident.  The procurement function is shifting its focus from daily procurement activities to long term, value adding procurement initiatives.  At the same time procurement is responding to the challenges and opportunities of electronic procurement (E-procurement), which refers to the utilisation of the internet to buy and sell products and services.

Sub-problems include:

- What are the current uses of internet-based technologies in CBZ Bank?

- What are the E-procurement drivers and barriers of the sample organisation?

- What are the key success strategic sourcing factors and E-procurement key success factors?

- Is CBZ ready to implement E-procurement

## 1.4    Research questions and/or hypotheses

### 1.4.1  Research Questions

The researcher will seek to answer the following specific research questions:

**RQ1.  What are the current uses of internet-based technologies in CBZ Bank?**

**RQ2.  What are the E-procurement drivers and barriers that impact CBZ Bank?**

**RQ3.  What are the key success strategic sourcing factors in CBZ Bank?**

**RQ4.  What are the E-procurement success factors in CBZ Bank?**

**RQ5.  What are the perceived benefits/transformations resulting from e-procurement initiatives in CBZ Bank?**

### 1.4.2  Hypotheses

The study is premised on the hypothesis that E-procurement has a positive influence on strategic sourcing practices of an organisation.

The sub hypotheses of the study are as follows:

*H1:    Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites*

*H2:* **Use of internet-based technologies is positively related towards enablement of E-procurement**

*H3:* **Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement**

*H4:* **Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement**

*H5:* **Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practices**

*H6:* **Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement**

*H7:* **Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement**

*H8:* **CBZ Bank is ready for uptake of E-procurement**

## 1.5    Definition of terms

For a study to be meaningful and be correctly interpreted by the readers, definitions of key terms have been created as follows:

### 1.5.1    E-procurement

Electronic procurement is defined as the act of placing an order over the web.  The source of the supply or good can be direct from a manufacturer through a trading network or through a Web-enabled distributor.  The transaction must involve buying and must occur over the Web (Source: IDC, 1999). E-procurement refers to the purchase of goods and services for organisations (Turban,; Lee,; King  & Chung, 2000).

### 1.5.2    Direct and indirect procurement

Direct procurement addresses all components and raw materials that are used in the manufacturing process of a finished product, such as sheet metal, semiconductors, and  petrochemicals  (Lamming,1995),  whereas  indirect  procurement  relates  to products  and  services  for  MRO  and  focuses  on  products  and  services  that  are neither part of the end product nor resold directly (Zenz,1994). With the advent of Internet technology, the area of MRO, the procurement of indirect material such as office supplies and services, has also become feasible for electronic support.

Direct  procurement  is  often  characterized  by  long-term  supplier  relationships, defined  procurement  processes,  rather  unmodified  material  master  data,  call-off orders and planned quantities. Indirect procurement, on the other hand, is based on ad-hoc activities which are difficult to put into an electronically supported work-flow. Since the products needed in this area are less frequently bought and usually of low

value, companies shy away from maintaining material master data for indirect products. The study of Subramaniam and Shaw (2002; 2004: 15) showed that indirect procurement especially can benefit from electronic support: "From our analysis, it is clear that the use of Web is beneficial for unstructured procurement, such as unplanned purchases."

### 1.5.3  Strategic sourcing

Conceptually, strategic sourcing can be best described through its main characteristics which are:

- It is a systematic and ongoing activity

- It is a corporate level strategy

- It concerns all activities and services in the organisation, including the core functions.  Its focus is to identify activities that are sourced within the organisation and activities that can be sourced outside the boundaries of the organisation

Strategic Sourcing can therefore be defined as:

"The disciplined and ongoing evaluation whether to source organisational processes and activities internally or externally, guided by maximizing the achievement of the business strategy and business goals".  Strategic sourcing therefore requires an in-depth and continual assessment of the value of internal and external activities, services and knowledge and their relevance in the context of the business function, processes, and activities. (Mookherjee, 2008).

## 1.6   Significance of the study

There has been a great deal of research and insight into the linkages in business between E-procurement and strategic sourcing, the role of buyer/supplier partnerships as well as the need to understand the transformation of business strategies resulting from the competitive use of advanced technology (Luftman and Brier, 1999). Most if not all of the research carried out was in the developed world where naturally, the use of technology is much higher and at an advanced scale, than in developing countries.

This study makes several contributions. First, the extant literature on E-procurement focused mainly on large economies and technology-oriented industries (Tatsis; Mena Van Wassenhove & Whicker, 2006) and not much on the service industry in developing economies, in particular the banking industry. Such large economies have major differences in economic, technological and social terms compared to newly industrialised and developing countries.   There has been little investigation of E-procurement outside of United States of America (USA) and European private sector service settings. What are we to make of E-procurement in different contexts and for different sorts of organisations? This study considers E-procurement in a different context to the majority of E-procurement articles, by investigating E-procurement in the context of a commercial bank in a developing country.

Second, this research is relevant to procurement practice, incorporating the CBZ Bank policy response to E-procurement. CBZ Bank can be viewed as a leader of policy direction locally, and the study gives an insight into how upper management in CBZ Bank balance competing procurement policy objectives. The findings may have

salience in the private sector and banking industry, where procurement is not only expected to achieve value for money, but also is increasingly used as a lever to achieve and demonstrate corporate social responsibility in their procurement and supply policies and practices.

This research will address several questions in procurement and strategic sourcing research. The current business environment is defined by intense local and global competition, increasingly demanding customers and shortening product life cycles, thus the prominence of supply chain management through strategies such as E-procurement and strategic sourcing for better cost control and utilisation of resources. This study will be helpful for organisations considering the adoption of E-procurement systems or coping with problems of development and implementation of E-procurement systems.

This research also seeks to test theories and models that have been designed and applied in the first world in the context of developing economies. Most companies in Zimbabwe are looking across the borders for business opportunities and the research will provide insight on why it is important to leverage E-procurement to improve efficiency within value chain activities and improve business performance.

In addition, this research will benefit CBZ Bank in the following areas:
- Achieving its strategic goals
- Implementing and sustaining its core strategies (first mover advantage
- Upholding its core values
- Maximum utilisation of Information systems in line with its business strategy

- Gaining and sustaining its competitive advantage as the largest and leading local commercial bank in Zimbabwe

- Opportunities to extend its market share, locally, regionally and internationally

- An opportunity for procurement synergies within CBZ Holdings

The impact of E-procurement systems includes economic efficiency as well as improved procurement capacity of organisations. Especially in developing countries and mid-income countries like Zimbabwe, the electronic transaction will reduce the possibility of corruption that usually occurs with face-to-face transactions.

## 1.7  Assumptions of the study

- The sample will be representative of  the population

- The survey instrument will have validity and in measuring the desired constructs

- The respondents will answer the  survey/questionnaires/interviews truthfully

- The survey will based on trust considering the sensitivity of the information requested from the bank

- Identities of respondents will be withheld except where consent has been given

## 1.8  Delimitation of the study

The focus of the research paper is on procurement of general office stationery, security stationery (such as cheque books), and office equipment, building materials,

vehicles and vehicle accessories and parts.  The sourcing of services, information, people and finances all fall outside the scope of this research.

The study will be limited to one financial institution in Zimbabwe, CBZ Bank Limited, a local commercial bank in the financial services sector of Zimbabwe, covering the period April 2009 to November 2009.   The survey will cover all the branches and some Head office departments of the bank. Research analysis will be limited to staff members who have been with the bank for at least three years.

Regarding geographic delimitation, this research will be confined to CBZ Bank-Head Office and Branches in Zimbabwe.

This study does not focus on measuring performance of E-procurement systems because the impact of a new system is hardly evaluated in a short period. This paper does not include performance measurement and assessment of E-procurement systems though some data on usage are provided.

## 1.9    Outline of the research report

Chapter 1- Introduction/Background

This will present the background.   It will give the statement of the problem, objectives, research questions, hypotheses, assumptions, definition of terms, delimitations and explain the benefits of the study.

Chapter 2 - CBZ Bank Limited

This will present background on CBZ and its current strategic sourcing and procurement processes.

Chapter 3 – Theoretical Perspectives

This review seeks to identify themes in the literature relating to E-procurement, with the aim of illuminating the possible issues influencing E-procurement adoption in CBZ Bank.

Chapter 4 - Empirical Literature Review

An empirical literature review will be carried out in the context of how implementation of E-procurement is and has impacted strategic sourcing globally in different economies. In seeking to explain differences in E-procurement adoption between organisations, several factors are identified in the literature.

Chapter 5 – Research Methodology & Design

This research will utilise both qualitative and quantitative methods to examine the impact of E-procurement on strategic sourcing. A case study will carried out on CBZ Bank, Zimbabwe. Interviews will be carried out with low, middle and upper management in CBZ Bank. Questionnaires (at least 60) will be sent to CBZ branches and Head Office units, and responses will be measured on a scale of 1 to 5 point Likert-type scale and the data will be analysed utilising a Statistical Package for the Social Sciences (SPSS) Version 17 and Microsoft Excel Spreadsheet 2007.

Chapter 6 – Results/Research Findings

This chapter will seek to interpret and analyse the findings to determine the linkage between aspects such as the research questions, objectives, hypothesis and literature reviewed.

Chapter 7 – Discussion, Conclusions and Recommendations

This will consider research key issues and assess whether the objectives have been met or not and whether the findings confirm or disapprove the hypothesis. Recommendations will be offered, limitations of the study be indicated and further areas of research be suggested.

## 1.10  Summary

The chapter has outlined the background information, statement of the problem, objectives, research questions, hypotheses, assumptions, definition of terms, delimitations and explain the benefits of the study.  Chapter 2 will focus on the case study, that is, CBZ Bank.

# CHAPTER 2: CBZ BANK LIMITED, ZIMBABWE

## 2.1 Background

Zimbabwe is a landlocked country situated in Southern Africa, which gained its independence in 1980. It has two major cities, Harare and Bulawayo which are representative of the major ethnic groups the Shona and Ndebele. Its population according to Central Statistical Office (CSO) is approximately 13, 7 million. (See Figure 2.1 below).

**Figure 2. 1-Map of Zimbabwe**



*Adapted from*: *Britannica Concise Dictionary on Answers.com (08 April 2009)*

### 2.1.1 CBZ Bank's Vision:

"To be the most respected bank in Zimbabwe by our staff, clients, shareholders, regulators and the community."

This vision is to be achieved through upholding:

- Employee Satisfaction

- Customer Satisfaction

- Growth

- Profitability

- Corporate Governance

### 2.1.2 CBZ Bank's Mission Statement:

- To be a progressive strong bank geared to serve personal and corporate customers

- To satisfy the diverse needs of our customers by offering a wide range of innovative financial solutions

- Our driving force is to be the preferred Bank where excellence is a virtue

- This is achieved through innovative service delivery, competency and flexibility whilst adhering to principles of integrity, transparency and fairness

CBZ Bank was established in 1980 as the Bank of Credit and Commerce Zimbabwe Limited (BCCZ) being a joint venture between the Government of Zimbabwe (49%) and Bank of Credit and Commerce International Holdings Limited (BCCIH-51%) of Luxembourg.

Following the collapse of the Barings Bank International in 1991, BCCZ, was also faced with collapse largely due to deposit run and its accumulated non-performing loan portfolio. In 1995, the Bank adopted Vision 2000 focused on;

- internal risk management issues

- further technology upgrading and enhancement

- reaching out beyond borders for correspondent bank networks

- Capital raising

- International banking partners

A successful recapitalisation exercise was completed in 1997, and this saw the Government of Zimbabwe's shareholding being diluted from 100% to 20%. ABSA became the single largest shareholder with 26%. The Bank's shares were listed on the Zimbabwe Stock Exchange on 29 June 1998 (current market capitalisation, USD $82million). In the same year, it was granted a dispensation by banking authorities to trade as the "Jewel Bank" in line with its vision to "become the Jewel of the Zimbabwean Banking Industry by the year 2000".

Through the hard work and commitment of management, and the technical partnership with ABSA Bank, CBZ Bank became the third largest bank in Zimbabwe in terms of deposits in 1998. The Bank was accorded the Euro Money Award for Excellence and being voted the Best Domestic Bank in Zimbabwe in 1999 and 2000 respectively.

The year 2005 saw the Bank change its name to CBZ Bank Limited and the establishment of a holding company, CBZ Holdings Limited (CBZH), whose subsidiaries are Datvest Asset Management Company, CBZ Building Society, CBZ Securities, CBZ Properties and Optimal Insurance Company as part of the strategy to diversify income streams (see Figure 2.2 and Figure 2.3 below).

**2.1.3  CBZ Holdings and CBZ Bank Organograms**
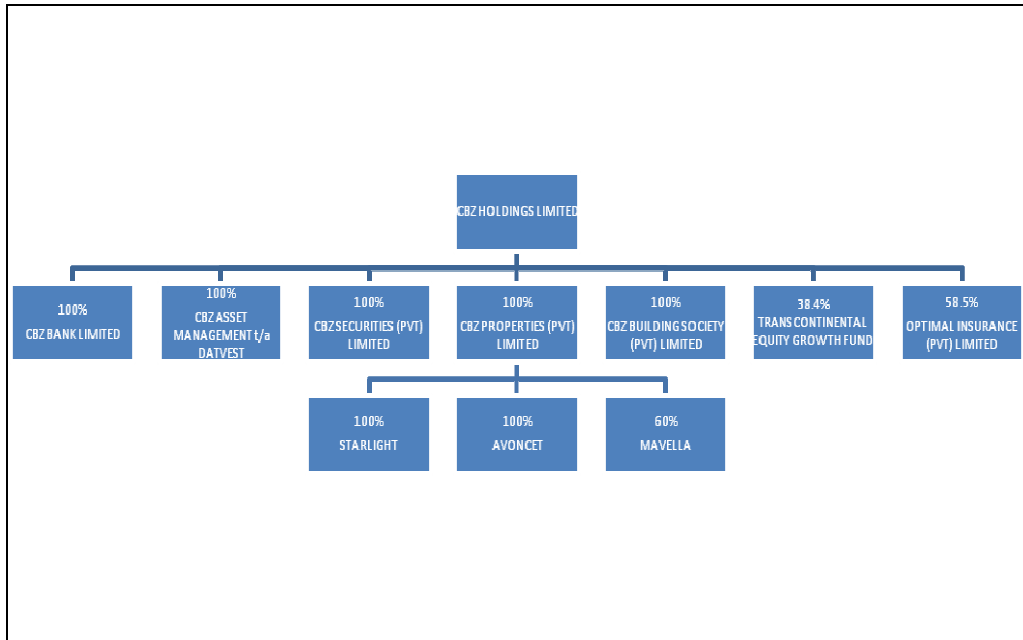
**Figure 2. 2- CBZ Holdings Organogram**
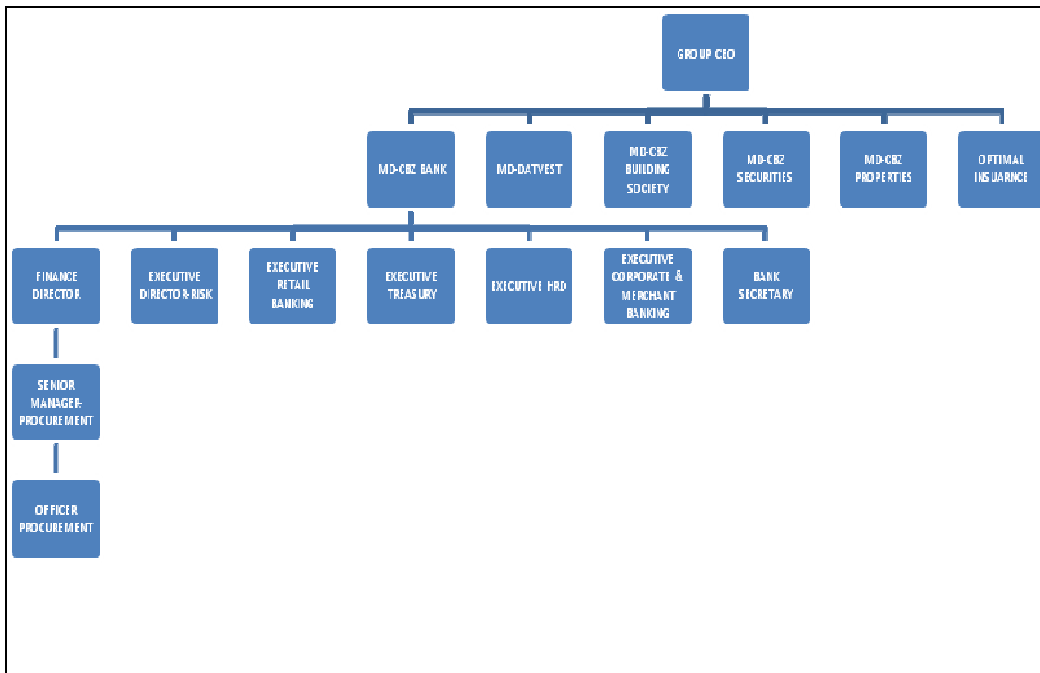


**Figure 2. 3-CBZ Bank Organogram**

CBZ Bank offers a wide range of accounts through a branch network (38 branches) that is well spread around Zimbabwe. CBZ Bank has branches in the following

centres: Harare -10 branches; Bulawayo - 4 branches; Beitbridge; Chimanimani; Chinhoyi; Chipinge; Chiredzi; Chitungwiza; Chivhu; Gokwe; Gweru; Kariba; Karoi; Kwekwe; Marondera ; Masvingo; Mhangura; Murewa; Mutare; Redcliff; Rusape and Victoria Falls, which has been split into 3regions, namely: 1, 2 and 3.

The period up to December 2008, was a very turbulent one, with numerous and frequent regulatory policy shifts and hyperinflation. The beginning of 2009 witnessed the liberalization of the economy. The major implication of the liberalized economy was that goods and services could now be sold in multiple currencies, effectively removing the Zimbabwe dollar (ZWD) as a mode of payment or store of value.

### 2.1.4  Challenges during 2008

- Hyperinflation
- Shortages of foreign currency
- Declining industrial capacity utilisation
- Intermittent supply of water and electricity
- Brain drain as labour sought greener pastures in the region and abroad
- Political instability
- Lack of confidence in financial services
- Lack of funding – lines of credit

### 2.1.5  Strategic response to challenges

- Accumulation of the land bank – store of wealth (estimated replacement value of USD$250million)
- Renovation and expansion of the branch network (71 branches)

- Upgrading of the IT systems

- Staff retention schemes to meet the increased volumes of transaction and protecting the brand

- Meeting and maintaining regulatory capital requirements

- Enhanced synergistic alliances among group companies

- Improved service delivery

- Continued IT systems upgrading to meet evolving customer requirements

- Increased geographical spread to better serve customers

## 2.2 CBZ Bank Procurement Policy and Procedures

The Procurement function is centralised at Head Office. While for all CBZ cost centres the major emphasis is the achievement of best value for money through a transparent procurement process, different management levels have differing procurement value thresholds particularly for day to day transactions.

### 2.2.1 Supplier Selection

Potential suppliers are selected from the numerous proposals received on a daily basis by mail, those referred by staff members and from media. Potential suppliers are requested to complete the supplier's application form which assists in eliminating fly by night suppliers. A physical visit is made to the supplier's premises to verify information supplied. Recommendations are made to Senior Manager (Procurement) on the suitability of the supplier to do business with the Bank. If the manager is satisfied the supplier is added on to the list. The key attributes considered in supplier selection are as follows:

- Product quality

- Performance

- Image

- Financial position

- Qualifications and experience of key personnel

- Cost of products

- Premises location

Suppliers are constantly reviewed on an on-going basis. Once the supplier is selected their performance is strictly monitored. Suppliers who fail to meet lead times and quality specifications are removed from the supplier list. The selection of printed stationery suppliers is more stringent. This is because the department would like to achieve consistency in bank colours particularly for items used externally. For certain printed work, for example letterheads and business cards, the Bank currently uses one printer to avoid variations in colours and styles. The Bank currently uses 6 suppliers for all the other printed stationery. Cheque books are restricted to one printer for security reasons. Occasionally the department receives instructions to deal with a specific supplier where the Bank has seen potential of providing the suppliers' banking requirements.

### 2.2.2 Budgets

All cost centres submit their budget requirements to Procurement Department who in turn screen and consolidate the final budget for approval.

### 2.2.3 Capital Expenditure

Capital Expenditure is defined as any expenditure of USD$100.00 and above for a single tangible asset for use in the daily activities of the Bank. The procedure for applying for an asset is as follows: The Branch Manager / Head of Department completes a capex form; where an asset is requested that is directly for use by a Head of Department, the responsible Executive Committee member should recommend the request. The capex application is sent to Senior Manager (Procurement), Head Office. One copy is retained at the Branch / Department. Senior Manager Finance completes sections applicable to finance, and returns the entire application to Senior Manager (Procurement) who then sends the form to Executive Director Operations and Executive Director Finance for approval. Where an application has been approved, Senior Manager (Procurement) forwards the originating business unit a copy of the Capital Expenditure Application Executive Summary for their records and to facilitate follow-up with the procuring Department, and forwards Senior Manager Finance a copy of the Capital Expenditure Application Executive Summary to enable the business unit's available Budget figure to be amended accordingly.   In the event of price differences (above 20% increase) occurring between the time of the approved amount and the actual cost at the time of quotation, Senior Manager (Procurement) is required to resubmit the application to the Executive Director Finance with an explanation of this price differential.

All quotations must clearly state the duration of prices and payment conditions. In the case of capital items purchased from reputable, long standing suppliers, consideration should be given to pay the quoted price before the goods are delivered to prevent escalation of the cost payable.  In certain instances where capital goods are restricted to one authorised distributor one quotation would be required. Special

attention should be paid to such suppliers, for example, the supplier is required to produce a certificate of dealership and the Bank may also check with manufacturer to prove the suppliers' claim.   The Procurement Officer selects the best quotation taking into consideration the following issues: ·

- The item being quoted matches the end user requirements
- Where an item requires future service/maintenance, that the supplier is capable of this
- The lead time proposed by the supplier (this should be stated on stated on the quotation)
- Competitiveness of the price (although the price is important it is not the ultimate determining factor)

The Procurement Officer will prepare the official Bank Order. The order is counter signed by the Procurement Manager. The distribution of the orders is as follows:

- Original copy to the supplier
- Second copy (green copy) to Finance & Accounting
- Third copy (pink copy) to Receipt/Despatch Section.

The Procurement Officer diarises expected delivery dates to facilitate effective follow up with respective suppliers. The Procurement Officer diarises expected delivery dates to facilitate effective follow up with respective suppliers. On receipt of asset, the Distribution Clerk must inspect and test in the presence of the supplier. Before despatch to the end-user, all assets must be locked away in the Procurement stores under dual control.   All assets must be despatched in sealed boxes and must be accompanied by memorandum, which states asset description and the serial number

where applicable. The branch must acknowledge receipt on the copy of the memorandum.

On receipt of the asset the branch should test/inspect the asset. Any defects must be reported immediately. The branch must acknowledge receipt on the copy of the memorandum.  Harare branches must receive their non imported capital goods 7 working days from the date of receipt by Procurement of the approved capital expenditure form from Executive Director-Finance and country branches will receive the goods 14 working days of receipt of the approved capital expenditure form.  In the case of manufactured goods examples of which are filing cabinets, tellers cannisters,bulk cash cage, CIT trunks, cheque writing desks, the supply lead time will vary from 2 to 6 weeks from date of receipt of the approved capital expenditure form from Executive Director-Finance.  The supply lead times for imported items will vary. Branches and Head Office units will receive these 8 weeks from date of receipt of the approved capital expenditure form from Executive Director-Finance. Procurement must maintain a fixed asset register and should contain the following data:

- Asset category
- Asset number
- Serial number (where applicable)
- Registration number (in the case of vehicles)
- Date purchased
- Original cost
- Accumulated depreciation
- Depreciation charge for the year

- Net book value

On receipt of invoice, the Distribution Officer captures asset details in Pastel Asset software as follows:

- Item description

- Amount

- Date of purchase

- Start date of depreciation and

- Serial number of asset where applicable.

Each asset must have a unique identification number. Procurement must number all Head Office assets prior to despatch to the end user. In  the case of branches, where practically possible, assets should be numbered before despatch. Where this is not possible, Procurement will issue the asset tags to Branches together with instructions on how the Branch should proceed.

The method of depreciation is the straight-line basis at the following rates per annum

- Freehold land Nil:

- Building 2.5 %

- Furniture & Fixtures 10%

- Office Equipment 20%

- Motor Vehicles 25%

- Computers 20%

## 2.2.4  Stationery

Stationery comprises commercial, printed and security stationery.

Commercial stationery comprises, bond paper, rubber bands ,paper clips, fax rolls, computer printout binders.

Printed stationery comprises letter heads, envelopes, Bank vouchers, deposit slips, deposit books, coin and notes bags.

Security Stationery comprises foreign drafts, Bank cheques, term deposit receipts, savings deposit passbooks, date stamps, customers cheque books, and computer stationery (statement paper, cartridges and floppy diskettes).

**Purchase of Stationery**: All procurement of commercial stationery for Head Office departments and greater Harare Branches is done by Procurement Department. The Procurement Clerks are responsible for sourcing quotations for stationery requirements. Three written quotations from approved suppliers are required. These are scrutinised by The Procurement Office and authorised by The Procurement Manager before dispatch to the respective supplier.

All Bank printed stationery is purchased by Procurement Department. The procedure is as per commercial stationery. The additional step is that Procurement Officer should scrutinise the printer's proofs before final printing. Emphasis is given to The Bank logo, colour schemes and fonts so as to maintain standard forms for all outlets.

All security stationery is purchased by Procurement Department. For security concerns security stationery printing is done by pre-selected printers. The most important factor in printer selection here is the security arrangements at the printer's premises. Security stationery is stored in a safe within the storerooms.

### 2.2.5  Tender Procedures

Tenders are floated for all high value-volume items. The Procurement Committee comprises three members - two from Procurement and one from Internal Audit. All high value/volume items are subject to the tender procedure. Single purchases of motor vehicles are not subject to tender. Products that are produced by sole suppliers, that is, letter heads, business cards and note money bags are not subject to tender process.  An advertisement is placed in the press inviting suppliers to submit bids. The advert stipulates item required, quantities and the closing date of the tender. All bids should be deposited in the Tender Box on the Bank's premises. The tenders are open to any supplier subject to meeting stated criteria, such as registration with the Zimbabwe Revenue Authority.  Companies not on the supplier list of the Bank will be permitted to participate. Once the tender has been allocated and the supplier is not on the suppliers list, the supplier will be evaluated for inclusion on suppliers list. If the supplier fails the evaluation, the tender will be allocated to the next best bid.

A tender document with specifications of items required will be obtainable from Procurement Offices at a fee to cover for administration costs. Procurement will supply samples of items required. Prices quoted by suppliers must be valid for a period of two weeks from the closing date of the tender offer.  Any supplier who wins the tender, but fails to supply the goods for whatever reason, will be blacklisted and struck off the Bank's suppliers list. The tender will be awarded to the second best bid. Suppliers are not to be present during opening of tenders by The Procurement Committee. The decisions of the Procurement Committee are final and no correspondence is entered into in respect to the award of any tender.

### 2.2.6  Receipt of purchased items

The Distribution Clerk is responsible for the receipt of stationery from the suppliers The items delivered should match the description on the copy purchase order. The quality should be as per Bank standards. Emphasis is placed on checking the Bank logo and colour schemes The Clerk signs for the goods if satisfied and completes a goods received note.  The first copy of the goods received note, together with the invoice and delivery note are sent to Finance & Accounting. The second copy of the delivery note is filed in Procurement Department.  At the end of the day all goods received are posted to the Pastel inventory system using the appropriate codes. Officer Procurement verifies all postings made into the Pastel inventory system.

### Issuance from Stores

Branches/Departments send their requests for stationery on the standard requisition forms. The authorised signatory in the department/branch should sign this form. The Distribution Officer verifies each signature on the requisition by comparing it to the authorised signature list on file in Procurement Department files.  The Distribution Clerk reviews the quantities ordered. The Distribution Clerk, in consultation with Distribution Officer may reduce quantities ordered if they appear excessive. The branch may be requested to justify unusual large orders. Stationery for out of Harare Branches is sent by overnight bag. The branches should acknowledge receipt on the copies of requisition forms sent with the stationery. The branch must acknowledge receipt within 1 week from the date of dispatch. The Distribution Clerk follows up on all stationery issuance not acknowledged. Any discrepancies noted should be immediately advised to The Distribution Officer. The Distribution Officer is responsible for the issuance of security stationery against a requisition signed by

designated officers. The Distribution Officer keeps authorised signatories from Branches/Head Office departments. Where signature on the requisition is not on the list of authorised signatories, the requisition is declined and returned to the branch with answer "signature not on file". Security stationery is dispatched to various units under cover of memorandum detailing quantity, type and serial numbers of items issued. On receipt Branches/Head office Departments must scrutinise all items thoroughly. Any discrepancies are immediately reported to the Senior Manager Procurement. At the end of every month, the Distribution Officer generates a stationery consumption report which shows stationery issued per cost centre and the monetary value. The general ledger stationery account for each cost centre is debited by the cost of stationery issued. A copy of the stationery consumption report is sent to the respective cost centre for their reconciliation. The Procurement Officer will once every month conduct a reconciliation of pastel balance to stationery stock balances in the general ledger which is verified by the Senior Manager Procurement.

**Cheque books**

Procurement is responsible for ordering of cheque books from the Bank Printers and subsequent dispatch of the cheque books to the respective branches. Cheque book requisition slips are consolidated from the various branches and sent to Procurement who in turn send an e-mail to the printers. The Cheque Book Clerk is responsible for the receipt of the books from the printer. Cheque books are delivered the day after the order was placed.  The Printer delivers the cheque books in a locked steel trunk. The Cheque Book Clerk unlocks the trunk and matches the delivered books per branch against the delivery notes in the presence of the printer's representative and signs for books if all is in order. If shortages are found the printer's representative

alters and signs the delivery note. The printer forwards an invoice once a month for all cheque books delivered. Costs are allocated to respective branches on the basis of quantities ordered for the month. The Branches maintain a separate database on quantities ordered to verify that costs allocated to them are accurate. The procurement process is summarized in Figure 2.4;
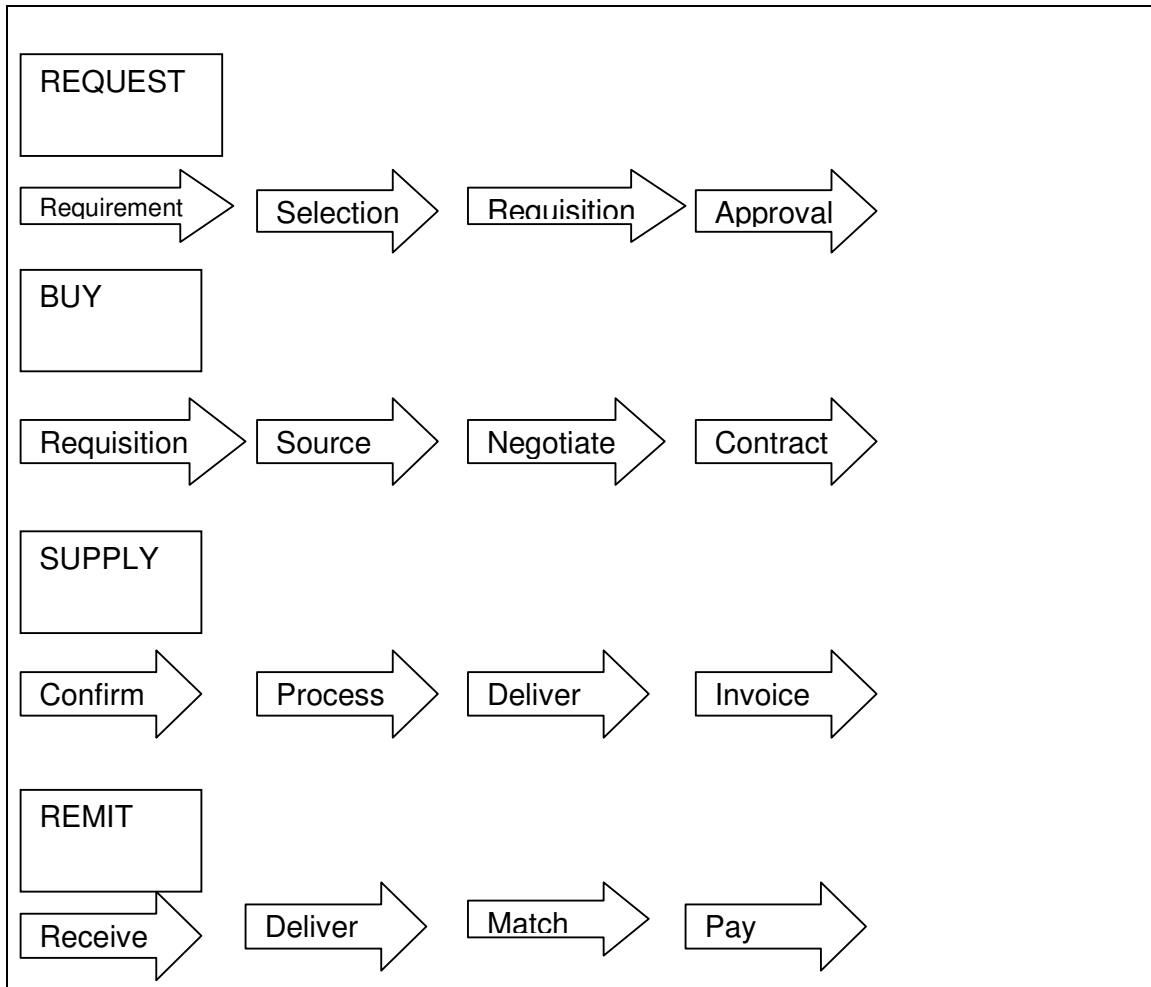


**Figure 2. 4- Operations included in the CBZ Bank procurement process**

## 2.2.7   Why CBZ Bank, Zimbabwe?

CBZ Bank, as a truly representative Zimbabwean based commercial bank has several characteristics that make it a perfect fit for E-procurement and a great example of how E-procurement can reshape Zimbabwe's banking industry. Firstly, CBZ Bank is the major part of a large supply chain. The scope of this supply chain and the role of CBZ Bank in it is reflected in its annual procurement spend of approximately US$3 million. The cost savings associated with E-procurement will be immense. Secondly, CBZ's ability to push adoption of E-procurement by every link of its supply chain raises the volume of deposits through its E-procurement by 80% per year, thus generating further cost savings associated with procuring across the whole supply chain. Thirdly, CBZ Bank, because of its familiarity with the benefits of EDI with its suppliers and customers, and its dominant placement in the supply chain, would be one of the early adopters of E-procurement within the Zimbabwean banking industry.

### 2.2.8 Contracts in place

Currently there are no long term contracts in place with suppliers, due to the multi-currency economic status. Most purchases are being effected on request thus resulting in very low inventory on site.

### 2.2.9 Items procured by CBZ Bank Procurement Department

Blinds, Bond paper, Business cards, Cabling, Calculators, Carbon paper, Carpets ,Cheque books, Coin counters, Complimentary slips, Computer accessories, Computers, Computers-hardware, Counter books, Decoders, Electronic utensils (kettles, heaters, microwaves, fans), Fake note detectors, Fax machines, Fire protection systems, Flags, Flat files Envelopes (with/without company logo), Grocery

items (tea leaves, milk, sugar, cups, plates, spoons), Ink cartridges, Internal stationery (vouchers, requisition forms), IT servers, Ink, Letterheads, Lever arch files, Light bulbs and fluorescent tubes, Markers, Note counters, Notepads, Office furniture (chairs, desks, filing cabinets, credenzas), Overhead projectors, Paper clips, Pens(ordinary and executive), Photocopiers, Printers, Rubber bands, Rubber stamps, Safes, Stamp pads, Staples, Staplers, Paper punchers, Televisions, Tissues and Vehicles.

**Projects Department**: Tiles, Bricks, Cement, Light fittings, Partitions, Steel, Buildings and Premises Signage for all outlets.

**Logistics Department**: Cleaning services, Directories, Fuel, Insurance services, Newspapers and print media, Postage Repairs and maintenance (fax machines, copiers, note counters,) Subscriptions (DSTv, magazines), Vehicle accessories (tyres, batteries, parts, jacks, spanners) and Vehicle services.

**Marketing**: Calendars, Diaries, Banners, Promotional items (t-shirts, golf shirts, umbrellas, tracksuits) and Consultancy.


## 2.2.10 CBZ Bank Procurement Requisition and Approval process

Capital expense items (CAPEX) are purchased upon completion of a 10 page capex form which is authorized by the Head of Department, Senior Manager Procurement and Executive Director Finance.( (see Figure 2.5 below);
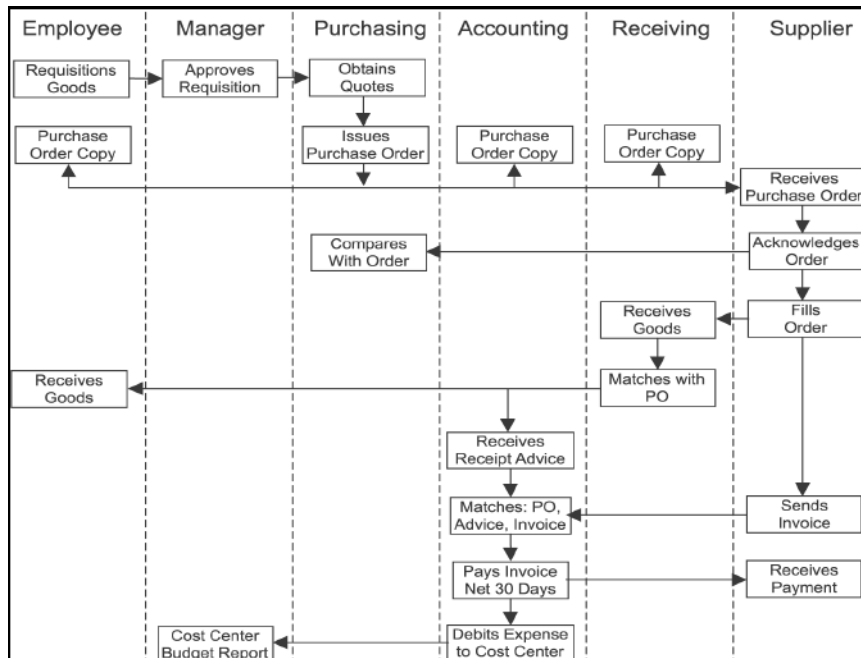
**Figure 2. 5- CBZ Bank Procurement Requisition and Approval processes**

## 2.2.11 IT infrastructure

CBZ is currently using the Flexcube system for Head Office and Flexbranch system for its branch network. The vendor is Oracle Financial Services (OFS) formerly known as Iflex. Flexcube is a modular system and additional modules such as for procurement need to be developed by OFS or if developed by a third party it must interface with Flexcube, but OFS does not encourage this.

## 2.2.12 Leasing of assets

Not all assets are owned, some are leased. These include photocopiers and telecommunication systems(switchboards (PABXs) in all Head Office units and Branches nationwide.

## 2.3   Summary

This chapter has introduced the case study, CBZ Bank Zimbabwe, its procurement processes and IT infrastructure.   Theoretical perspectives of E-procurement and strategic sourcing will be considered in Chapter 3.

# CHAPTER 3: THEORETICAL PERSPECTIVES

## 3.1    Introduction

In this chapter, a comprehensive theoretical literature review will be carried out to guide the development of the most appropriate methodology for the research study. Though not exhaustive it gives guidance on key aspects of the study. The review of related literature aims at providing the necessary framework within which the problem is presented, analysed and interpreted. Given that the objective of this research is to investigate the impact of E-procurement practices on strategic sourcing in a commercial bank's capabilities, the literature review is organised along the lines of these individual research streams. First, a theoretical discussion of past research on E-procurement is reviewed and is followed by studies devoted to strategic sourcing.

This chapter provides an overview of the literature pertaining to E-procurement and strategic sourcing. Today companies are facing increasing market pressures due to globalisation, shortened product life cycles and more sophisticated consumer tastes (Cavinato, 1992). This chapter also examines literature on E-procurement and its current use and benefits. Procurement is an integral part of a company's relationships with its suppliers, besides internal cross-functional efforts. E-procurement has emerged as a critical tool enabling Procurement to carry out several purchasing-related tasks efficiently.

## 3.2    Trends in Procurement

### 3.2.1    Procurement

Procurement usually represents one of the largest expense items in a firm's cost structure (Lennon, 2002) (Attaran and Attaran, 2002). The Aberdeen Group (2001) found that the indirect procurement or the purchase of maintenance, repair, and operations (MRO) of goods not to be directly involved in the production process such as office supplies, personal computers, nonmanufacturing items, etcetera (Laudon & Traver, 2004) and this usually constitutes 30-60 percent of a firm's total expenditures (Orr, 2002). Moreover, corporate buyers tend to waste time on non-value adding activities such as data entry, correcting errors in paperwork, expediting delivery, or solving quality problems (Turban; King; Lee, & Viehland, 2006).

The procurement and supply (procurement) activity of organisations is one which spans both internal service and business-to-business (B2B) services. This is an important activity found in all organisations, public, private, governmental and charities and can be responsible for a large amount of spending. Such spending on, for example, materials components, facilities, subcontract capacity, IT equipment and supplies, consumables, stationery, travel and insurance can constitute a significant amount of money. Most organisations spend at least one-third of their turnover/income on the purchase of goods and services (Zenz and Thompson, 1994) (Killen and Kamauff, 1995).

Procurement is traditionally an internal service provided by a dedicated team of professionals. It typically operates at the interface between the organisation's external supplier marketplace and the organisation's operational processes. Procurement has many of the characteristics of the marketing function though it faces the other direction in the supply chain. Procurement is usually responsible for

the identification of (internal) customer's needs, translation of those needs into specifications, management of the delivery of goods and services and an assessment of the (internal) customer's satisfaction with those goods and services. The other elements of the process involve communication with suppliers – sourcing, requests for tenders, price negotiation, ordering, receipt and invoicing. In examining the utility of an internal service perspective for procurement, Stanley and Wisner (2002) reinforced the links between internal and external service quality, supporting the contention that positive internal customer service provided by procurement has a significant impact on the external procurement performance.

Earlier, Procurement placed emphasis on the transactional elements of procurement, such as taking up a reactive role in the company and following up on the transactions. In most companies, the procurement process hasn't changed in decades. The majority of businesses still employ a largely paper-based process that is inefficient and error-prone. But unlike marketing, procurement is often seen as a "Cinderella" activity in many organisations. Managers often see "promotion" into the procurement function as a retrograde step into an organisational backwater (Bales and Fearon, 1996). It is often held in low regard by its internal customers who see the function as bureaucratic, difficult to deal with, sometimes remote and delivering poor service (Nolan, 1999). Senior managers too, often see it as a problem area where there is low compliance with internal customers either abusing or circumventing the systems (Croom, 2000) (Gebauer and Seveg, 2001). It is also regarded as a high cost activity where there is unnecessary paperwork, material costs and errors (Lamming, 1993) (Hines, 1994). Indeed PriceWaterhouseCoopers

suggested that a 10 per cent reduction in purchase costs could easily lead to a 50 per cent rise in profit margin (Sheng, 2002).

In the past, companies would mostly look to make cost-savings from headcount reductions or internal reorganisation. Now they are increasingly turning to procurement and strategic sourcing as a means for cost reduction. When they do, they find that by analysing and rationalising their external spending, they cannot only make considerable savings, but that these translate directly to the bottom line without the time lag, redundancy costs, or disruption and loss of capacity sometimes involved in internal cutbacks.

In recent years procurement has gone from being a little-discussed aspect of business to becoming something of a buzzword. Recently, attention has been given to the impact of Information Technology on procurement practices. Recent industry research indicates that only 8 percent to 10 percent of the largest 5,000 companies have purchased E-procurement systems. However, E-procurement is gaining broad appeal. Faced with skyrocketing expenses of traditional procurement systems, companies are forced to emphasize E-procurement over other IT projects. In fact, E-procurement is the fastest-growing software segment, followed by customer relationship management, supply chain management, and enterprise resource planning. Early adaptors of E-procurement have reported lower costs of goods and services purchased, lower inventory levels, shorter lead-times, and improved communications with suppliers

### 3.2.2 Procurement process types and systems

Procurement can be divided into two primary areas:

Indirect procurement is non-production-oriented procurement and commonly deals with maintenance, repair and operating (MRO) supplies. So far, it has not been effectively controlled or automated at most organisations, resulting in increased materials costs and significant maverick spending. Recently, internet-based procurement is getting widely used to improve the management and acquisition of MRO goods.

Direct procurement is production-oriented procurement which refers to the procurement of raw materials and parts needed for the manufacturing of finished goods. Makatsoris *et al.* (2001) compared different types of procurement and they classified direct procurement as strategic buying and indirect procurement as transactional buying.

The procurement process is made up of a series of activities, aiming at finding the right product or service at the best quality and lowest price. In fact, a procurement process can range from: Strategic buying, whose main objective is to establish long-term relationships between customers and suppliers, this requires a careful vendor selection and a long-term agreement on the supply management. Transactional buying, which implies repetitive purchases with the same vendor, based on yearly blanket orders or outline agreements; Spot buying, whenever urgent requests come out and all the pre-qualified suppliers are not capable of fulfilling them.

The role played by the procurement department has radically changed over the years. Traditionally, the procurement department has been considered a reactive

transactional function, mainly in charge of processing supply requests coming from production and logistics departments and of negotiating orders with suppliers in order to gain the lowest bidding price. Strategic decisions (for example, high-value order approvals and long-term agreements) need to be ratified by the company's Chief Executive Officer.

Internet procurement now delivers significant return on investment (ROI) through reduced prices for goods and services; shortened order processing and fulfillment cycles; reduced administrative burdens and costs; improved control over off-contract spending; and better inventory control. By introducing internet procurement, purchase and fulfillment cycles reduced to 2 days from 7.3 days compared to traditional paper-based procurement, administration costs reduced to $30 from $107 per order requisition. As shown above, the introduction of E-procurement brings huge benefits to industry.(Caridi; Cavalieri; Diazzi & Pirovano, 2004).

The increased focus on E-procurement solutions and capabilities has dramatically impacted the traditional procurement function,resulting in a shift in focus to value-added straegic activities.  When implemented separately ,strategic sourcing and eprocurement can achieve significant benefits for an organisation.

### 3.2.3  The Evolution of Procurement

Several conceptual studies have analysed the developmental stages the procurement function transitions through in its growth, as shown below. The major issues addressed in these studies can be summarised as top management commitment, functional leadership, procurement strategy, procurement activities,

supply management, organisational issues, people issues and performance measures.(van Weele and Rozemeijer,1998; van Weele, 2002)

Whilst there are some differences, all these models show similarities. At the earliest stages, Procurement is more reactive in nature and does not have much say in the procurement process other than following-up on the purchase order-related transactions. The earliest sign of some kind of evolution is when Procurement becomes responsible for all activities related to sourcing decisions. The function starts aggregating orders to achieve cost benefits. The organisational structure becomes clearer for this function. In later stages, factors other than cost start affecting procurement behaviour. The function establishes collaborative relationships with key suppliers. In the latest stages, Procurement assumes greater supply-chain related responsibilities.

The evolution of procurement is denoted in Figure 3.1and Figure 3.2  below:

| | 1985<br><br>Fragmented, on- leveraged<br><br>demand | 1995<br><br>Aggressive sourcing | 2000<br><br>Corporate procurement evolution |
|---|---|---|---|
| **Procurement process and data availability** | • Numerous legacy systems<br>• Fragmented procurement<br>• Fragmented procurement data<br>• Paper intensive procurement process | • Numerous legacy systems<br>• ERPs improve data aggregation<br>• Partial electronification of procurement and centralization of | • Introduction of enterprise procurement software<br>• Use of web technologies to link disjoint legacy data |

| | 1985<br><br>Fragmented, on- leveraged<br><br>demand | 1995<br><br>Aggressive sourcing | 2000<br><br>Corporate procurement evolution |
|---|---|---|---|
| | | procurement<br><br>activities | |
| Market place<br><br>**technology** | • Bidding process<br>  conducted through<br>  paper RFP/RFQs | • Bidding process<br>  conducted through<br>  paper RFP/RFQs<br>• EDI | • Development of easily<br>  accessible web-based e-<br>  market places<br>  (exchanges, e-RFQs,<br>  reverse auctions, e-catalogs<br>  and on-line vendor<br>  communities) |
| **Procurement**<br><br>**skills** | • Maintaining supplier<br>  relationship<br>• Indirect goods<br>  sourcing | • Category specific<br>  sourcing skills and<br>  vendor knowledge<br>• Post-sourcing<br>  management skills | • Ability to conduct<br>  sophisticated analysis to<br>  standardize materials and<br>  consolidate suppliers<br>• Proactive, internet-enabled<br>  sourcing and continuous<br>  supplier management<br>• Direct goods sourcing |
| **Outcome** | Lack of understanding of true<br><br>demand levels<br><br>High indirect costs | Significant post-sourcing cost<br><br>savings<br><br>Cost creep back up due to<br><br>inefficient monitoring policies<br><br>and procedures | Information availability increase buyer<br><br>power over suppliers<br><br>Significant  sustainable cost<br><br>reductions achieved through demand<br><br>aggregation, process efficiencies and |

| 1985 | 1995 | 2000 |
|---|---|---|
| **Fragmented, on- leveraged demand** | **Aggressive sourcing** | **Corporate procurement evolution** |
| | | elimination of renegade spending |
| | | Further unit cost reductions realised |
| | | through consolidation of demand |
| | | across organisations |

**Figure 3. 1-Evolution 2-Stages of Procurement Evolution  (Source: Delloitte & Touche,2007)**

| Stages of Procurement Evolution | | | | | | |
|---|---|---|---|---|---|---|
| **Reck and Long(1988): Passive** | Independent | Supportive | Integrative | | | |
| **Cavinato (1991) Centralised Procurement** | Decentralised Procurement | Centralised Coordinator | Area Planner | Supply Manager | Commodity Team | Logistics pipeline |
| **Freeman and Cavinato(1990 (1991) Buying** | Purchasing | Procurement | Supply | | | |
| **Anderson and Katz (1998) User buy** | Linked buy | Leveraged buy | Integrated sell | | | |

**Figure 3. 2-Stages of Procurement Evolution**

### 3.2.4  The Changing Role of Procurement

Some Heads of Procurement see E-procurement as a threat, because it is likely to remove some aspects of the job. However, the best procurement people will recognise it as an opportunity to develop their role and demonstrate value-addition through strategic supplier management, contract negotiation, running online auctions and working with suppliers to develop the range of products available. The importance of the procurement department within an organisation has become increasingly prominent over the last 30 years, and the introduction of E-procurement should help to continue and accelerate this trend, as procurement professionals place greater emphasis on their strategic capabilities (Noto, 2001:15).

E-procurement has also become an enabler for many of the best practices as well as a best practice in its own right. Automating and distributing transaction processing into the hands of employees frees the procurement team to do more value-added work. The emergence of E-procurement makes use of new tools such as reverse auctions, global sourcing, aggregated volumes, and fast and inexpensive communications, enabling more companies to implement best practices and save money.

It is also worth noting that there is unprecedented demand for good procurement people in the market, and as a result, procurement professionals are receiving better pay and more recognition than ever before. However, the high demand for qualified people has meant that some organisations are experiencing difficulty in recruiting

and retaining staff to run their procurement departments, which leads to further changes in the way the procurement function is carried out in the next few years.

The procurement process is a critical supply-chain management function since it has a direct impact on a company's supply-chain performance. The procurement process involves the exchange of a high volume of information and requires the analysis of this information to arrive at procurement decisions that fully satisfies the procurement policies and specific aims of the business.

Prior to E-procurement being introduced, buyers frequently had to deal with individual transactions. They had to negotiate with suppliers, convert purchase request into purchase orders, handle queries and ensure the proper allocation of the invoices received. Operationally buyers had little influence over the choice of suppliers and the purchased products. Their negotiating power was limited as the decision to purchase was made by the requester and/or authorizer (see Figure 3.3).
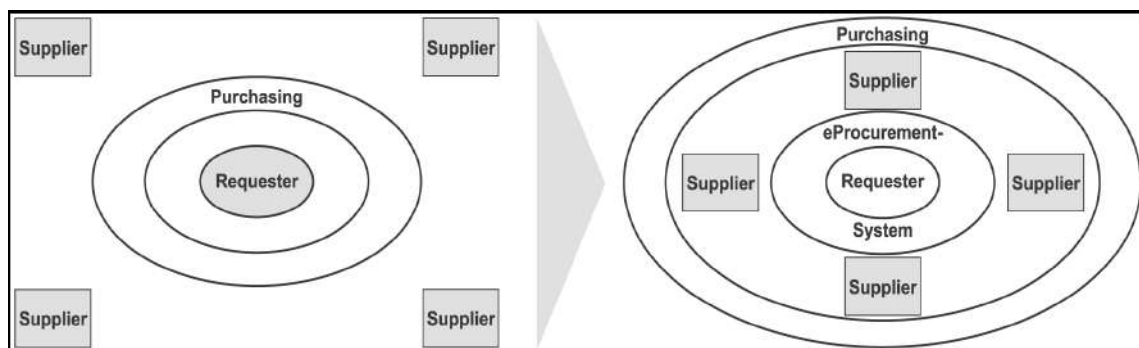


**Figure 3. 3- Shift from managing transactions to managing suppliers**

**Adapted from: Puschmann and Alt (2005: 126)**

Identifying the right E-procurement strategy for each commodity is crucial to the success of a company's solution and therefore ranks as one of the major challenges. Procurement supports a delivery-relationship between buyers and sellers (Koppius, 1999). Being a broader scope than "purchasing," procurement involves strategic activities such as sourcing, negotiating with suppliers, and coordination with R&D (Eyholzer and Hunziker, 2000). However, both the buyers and sellers need to have basic computer skills to use the electronic inquiry forms, and buyers may not trust the Internet to provide personal information to the sellers. Therefore, in order to minimise such weaknesses and threats, as well as to maximize the benefits that can be gained from the migration, careful planning is essential.

### 3.2.5 The Four-Phase Migration Model

The first phase of migration is the digitisation of data with database systems arranged in a local area network (LAN) to manage the information storage and retrieval within the company. In order to maintain such a system, security and financial issues such as login and password control and firewalls to protect the LAN, and costs for computer hardware/software and staff training should be treated as important as technical requirements.

The next phase is the setup of communication infrastructures with other companies where information is transferred or exchanged within the inter-organisational connections through e-mails and electronic data interchange (EDI). Costs for Internet access and building of EDI and e-mail systems, and a more sophisticated firewall to protect such systems are required.

The third phase is the implementation of an electronic commerce (EC) front-end system for the procurement business processes where information processing can

be facilitated with Web sites and search engines. Costs for staff training for the implementation and maintenance of the EC front-end system as well as technical and EC consultations, and a firewall to protect such systems are required.

The last phase is the integration of a vertical portal where the EC front-end system is coordinated with third parties, such as transaction and logistic bodies. For security reasons, data are encrypted for information transaction as well as protecting such a complicated system with firewalls. There are also costs for maintaining such a system and transaction charges paid to the third parties, such as banks and logistic bodies. In addition, an authentication access model should be carefully implemented with each phase as different access rights are given to different functional staff or users to avoid the misuse of information. Electronic transactions can be done without the need of physical forms of payment that are restricted to geographical and currency barriers. Suppliers can benefit from secure real-time collection of payment while the risk of unsuccessful receipt of payment is lowered resulting in a profitability improvement. With delivery, uncertainty of receiving time is reduced by separated logistics and shipment, while information flow or communication between suppliers and logistic third parties is facilitated (Yen and Ng, 2003).

Not every company will fully adopt EC while integrating their procurement functions into the Internet, companies may not necessarily need to implement all four phases or start from the first phase, depending on the existing technical requirements of the companies. One should be aware that the degree of expertise, intangible costs, complexity of information, security, and uncertainties increase from phase one to phase four, therefore careful planning is necessary with the migration of a

procurement process on to the Internet in order to achieve a positive impact (Yen and Ng, 2003).

During the transition to an E-procurement system, non value-added activities such as manual approval processes and invoice matching via phone/mail/fax are replaced with online approval, EDI for purchase orders and other technical enhancements. The new process is more streamlined, buyers have more time to focus on strategic rather than transactional functions and manual payable and receivables are handled electronically as denoted in Figure 3.4 below.
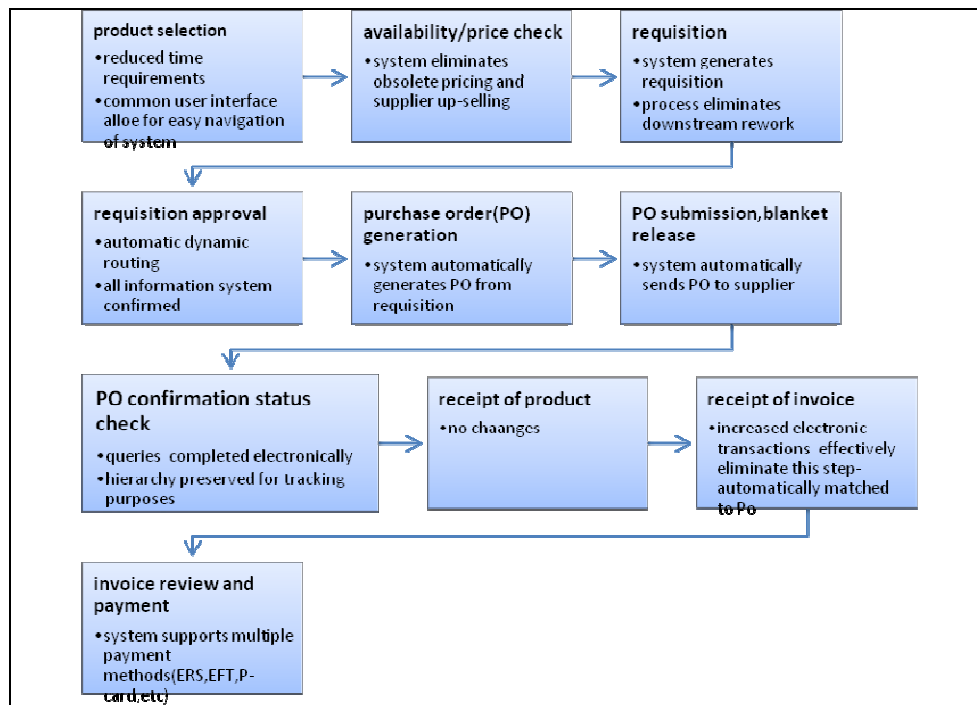


**Figure 3. 4- E-procurement Processes**

## 3.3  E-Procurement

Definitions of E-procurement vary across literature in the field. E-procurement has been defined as the use of information technologies to facilitate B2B purchase transactions for materials and services (Wu *et al.*, 2007). Different forms of technology are appropriate for different procurement activities; six forms of E-procurement have been classified (de Boer,Harink & Heijboer*.,* 2001), including e-ordering/e-Maintenance Repair Operate (MRO), web-based enterprise resource planning (ERP), e-sourcing, e-tendering, e-reverse auctioning/e-auctioning and e-informing. Other writers have classified E-procurement into three broad types – transaction management to manage the requisition to payment process, brokerage such as using electronic exchanges and e-auctions, and electronic integration which may involve shared information systems in the supply chain, such as EDI or sharing computer aided design systems (Chopra, Dougan & Taylor., 2001a; Kalakota, 2000). The approach taken in this research was to use an all encompassing definition, and to define E-procurement to include all forms of use of electronic infrastructure that connects two organisations in the purchasing process (de Boer, *et al.,*2001; Min and Galle,2003).   A broad perspective has also been taken in other research and ensures that respondents are not confused over intricate and minor differences in definitions when responding to self-administered questionnaires.


While a number of definitions of E-procurement exist. Presutti (2003:221) defined E-procurement as "A technology solution that facilitates corporate buying using the internet." Min and Galle (2003:227) define electronic procurement as "Business-to-business procurement practice that utilises electronic commerce to identify potential sources of supply, to purchase goods and services, to transfer payment, and to

interact with suppliers". This is the definition that was adopted for this research because it is comprehensive.

E-procurement refers to the purchase of goods and services for organisations (Turban *et al.,* 2006). The term E-procurement refers to the use of the Internet, to buy and sell productions, services and information (Heizer and Render 2000). E-procurement applications are limited in the types and scope of purchasing activity they address (Gilbert 2000). All E-procurement applications aim to improve the efficiency of procuring personnel, automating the approval cycle, enabling negotiation of better contract pricing, leveraging existing contracts more effectively and reducing off-contract purchases (Croom, 2000) (Weil 2000a,2000b).

Definitions of E-procurement vary in both scope and depth; ranging from a narrowly defined technology-focused view through to a much broader business focused view. Most E-procurement research studies place technology and applications centre stage focusing on the adoption and implementation of specific technology solutions such as integrated catalogues, reverse auctions or e-marketplace systems. Whilst such studies provide important insights into technology adoption they tend to investigate a limited range of procurement activities. Their focus is primarily on requisitioning (i.e. selection of products, authorization, and order placement, etcetera) and the operational/transactional aspects of E-procurement. The emphasis is on the use of technology to substitute or enhance transactional activities in order to gain operating efficiencies (Essig and Arnold, 2001) (Osmondbekov *et al.*, 2002). Electronic procurement is defined as the act of placing an order over the web. The source of the supply or good can be direct from a manufacturer through a trading

network or through a Web-enabled distributor.  The transaction must involve buying and must occur over the Web (Source: IDC, 1999).

Other research studies take a broader business oriented view of E-procurement reflecting the shift in the role of procurement from a back-office, operational and reactive function to one that is more strategic, proactive and transformative. The focus of these studies is on the use of IS-enabled innovations in procurement to enable value creation and collaborative commerce. This broader, business oriented view encompasses a wider span of activities ranging from strategic sourcing and supplier relationship management through to settlement and payment of goods. It describes the end-to-end process in terms of a "Source-*to-settle procurement lifecycle*" (Knudsen, 2002) (Archer  and Yuan, 2000) (Carfax-Foster, 2003). The focus is on both the strategic and operational aspects of E-procurement. That is, E-procurement is viewed as "The value-added application of e-Commerce solutions to facilitate, integrate and streamline the entire procurement process – all the way from initial strategy development through contract placement to payment" (Laub, 2001).

The benefits are a result of reduced paper transactions, shorter order cycle time and subsequent inventory reduction resulting from speedy transmission of purchase order related information and enhanced opportunities for the supplier/buyer partnership through establishment of a web of B2B communication networks.  In addition, supply chain efficiency is improved by providing real-time information regarding product availability; inventory level, shipment status and production requirements (Min and Galle, 1999).  These advantages become more evident when part of procurement is automated through the web. (Khoo *et al.*, 1998).

During the e-boom of the 1990s, academics, consultants, executives and investors alike claimed that E-procurement, and its increasingly central role in supply-chain management, would revolutionize how future business-to-business practices would take place: Efficiencies would be improved and procurement costs reduced; the flow of information along the supply chain enhanced; strategic partnerships between networks of firms deepened.  Many predictions about the wide-ranging impact of these transformations proved to be exaggerated. However, it would be unwise to dismiss all this excitement as just smoke and mirrors, because the rise of e-technologies, in fact, has resulted in considerable changes for corporate supply-chain strategies and practices over the past five years.

The widespread adoption of enterprise-resource planning systems, spurred by the Y2K threat, provided a fertile platform for E-procurement growth. The ability to use ERP systems to capture data on companywide spending related to suppliers allowed companies to segment their supply base and separate strategic sourcing from tactical supply. The e-bust of 2000 did instill caution in those advocating for the expanded use of E-procurement; nonetheless, even today, when asked about their future plans, chief procurement officers point to a diverse set of E-procurement initiatives, ranging from e-sourcing to procurement process automation to expanded use of reverse auctions (Johnson and Leenders, 2004).

E-technologies and their applications within the supply chain, including use by suppliers, manufacturers and retailers range from the simple automation of long-standing business practices to complex networked real-time linkages. One specific

area E-procurement remains critical to building and maintaining competitiveness for manufacturing and service firms. E-procurement encompasses a number of specific elements, including e-sourcing, e-coordination and e-communities (de Boer *et al.*, 2001) (Jap and Mohr, 2002). Current research in the field points to several key factors that favor stronger competitiveness and better performance.

Information and communication technologies are changing the way organisations do business, particularly the adoption of e-business and e-commerce. The scope of e-business includes information exchange, commercial transactions and knowledge sharing between organisations (Croom, 2005), whereas e-commerce focuses only on commercial transactions (Cullen and Webster, 2007). Some of the technologies associated with e-commerce include websites, e-mail, extranets, intranets and electronic data interchange (EDI) (McIvor and Humphreys, 2004).

Electronic procurement systems in essence mirror the procurement process through the provision of two distinct, but connected, infrastructures – internal processing (via, for example, corporate intranet) and external communication with the supply base (via, for example, Internet-based platforms) (Croom, 2000). The critical difference is that such systems allow individual employees to order goods and services directly from their own PCs through the Web. Requests and orders are channelled through various forms of "hub" or database which acts as an online catalogue of specifications, prices and often, authorisation rules. Such systems allow individual employees to search for items, check availability, place and track orders and initiate payment on delivery. It is important to note that E-procurement is not an example of

re-engineering old manual processes but a re-engineering of the process itself (Sheng, 2002).

Traditionally, procurement has involved a number of communication mediums to facilitate procurement process between the various parties. These have included the use of mail, phone, fax, EDI and more recently, email and the internet. E-procurement has evolved into "The *use of electronic technologies to streamline and enable the procurement activities of an organisation*" *(OGO, 1999, n.p.)*. According to the studies of Croom (2000), de Boer *et al.* (2002), Presutti (2003), Kim and Shunk (2004), Albrecht,Dean & Hansen,(2005), and Tatsis *et al.* (2006) on procurement, E-procurement and e-marketplace, they define that "*E-procurement is* organis*ation's procurement using the internet technologies, including e-design, e-sourcing, e-negotiation and e-evaluation*".

Information technology has been a key enabler in procurement's evolution into a more strategic business function, by reducing the time taken to complete mundane tasks and allowing procurement agents to focus on more value-added activities. The Internet and electronic commerce especially have much to offer in the way of increasing the efficiencies and competitive advantage of procurement (Rajkumar, 2001). Companies that plan on utilising new IT need to be aware of the fact that the implementation of these systems does not necessarily imply an improvement. Understanding the implications of adopting IT systems, companies can determine the degree of participation, and control to reap positive results .(Cash and Konsynski, 1985). The strategic impact of IT is seen at different levels including company level, inter-company level and industry level. IT has an effect on the

industry structure due to the dynamics of key competitive forces.  At the company level, IT's impact on a company's strategy is due to limited resources.  Companies need to clarify the fit between different technologies and their needs to build a strategic advantage (Benjamin *et al.*, 1995).

Most companies are already using the basic form of E-procurement by simply buying product and services over the Internet.  In a larger sense, E-procurement is coming to mean automating the whole purchasing process and making order and requisition information available along the entire supply chain (Roche, 2001).

E-procurement automates the transactional aspect of procurement allowing companies to focus on maximising the value from supplier relationships. The result is an enhancement of the transactional aspects of the procurement process to increase efficiency of daily processing and transactions, as denoted in Figure 3.5 below.
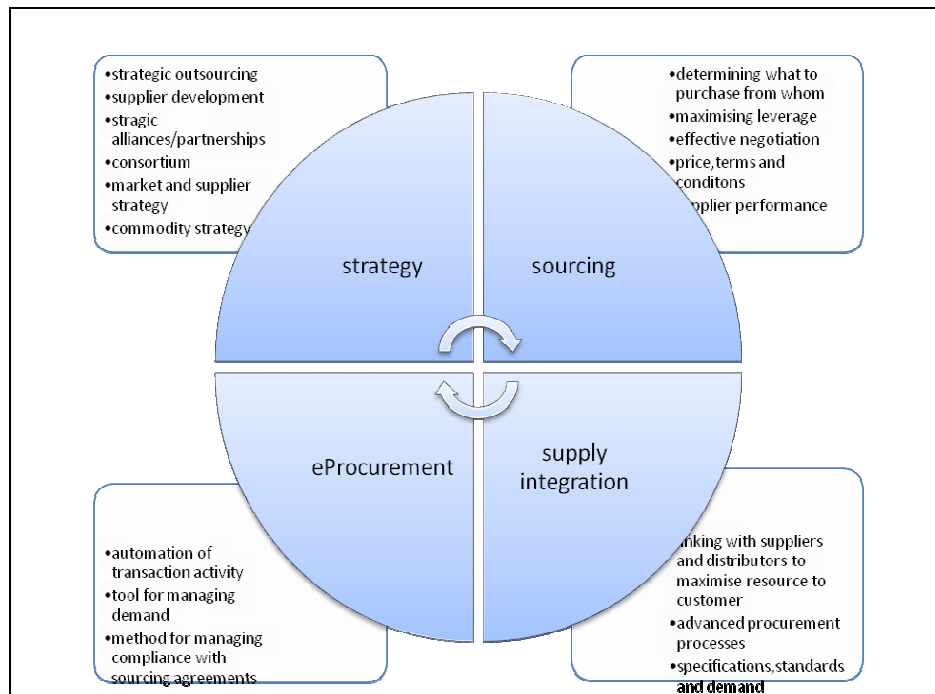


**Figure 3. 5-E-procurement Enhancements**

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The reality is that at present, while many of the larger organisations are considering implementing an E-procurement strategy, only a few have actually done so, and an even smaller number are currently transacting with their suppliers using an E-procurement system. It will take time for the practice to become widespread, but within the next few years E-procurement will become the norm for every successful large organisation (Noto, 2001).

**Value of information technologies and information systems.**

Determining the value of information technologies for companies is a demanding process. Clemons (1991) argues that companies need to explicitly acknowledge alternatives, understand the impact of complementary resources, analyse the potential for sustainable competitive advantage and understand the end results of not investing. Dos Santos(1991) argues that implementation of new information technology (IT) provides additional value in that it opens the door to companies to make subsequent investments and proposes an options pricing model to assess this value. Companies that plan on utilising new IT need to be aware of the fact that the implementation of these systems does not necessarily imply an improvement. Companies need to clarify the fit between different technologies and their needs to build a strategic advantage(Benjamin *et al,* 1995., 1984).

### 3.3.1  Factors influencing adoption of E-procurement

Exploratory studies have indicated that many companies are pursuing electronic means to conduct business, that there are a number of factors influencing the adoption of electronic commerce, and that these may be summarised as E-procurement, e-sourcing and e-collaboration(;Dooley and Purchase, 2006).

A considerable number of studies have been conducted to determine what influences a company to become involved in E-procurement(Cavinato,1991; Ellram and Carr,1994; & Zsidisin, 2002) (Min and Galle, 2003) (Croom, 2001) (Croom and Brandon-Jones, 2004) (Davila *et al.*,2003,2003a,2003b; ) (Joo and Kim, 2004). Factors that influence usage of E-procurement include supplier participation and influence, external organisational pressures, internal organisational support, network connectivity/integration, perceived task improvements/convenience.

**Organisational factors**

The main organisational factors that appear to impact on the likely adoption of E-procurement are size and type of operation. E-procurement is more evident in bigger organisations than smaller. Small to medium enterprises (SMEs) often lag behind larger organisations in E-procurement adoption (ISM/Forrester Research, 2003). Reasons for this include owner attitudes, resource poverty, limited IT infrastructure and limited knowledge and expertise with information systems (Harland ,Caldwell,Powell,& Zheng 2007).  The use of E-procurement applications often goes hand-in-hand with repetitive purchases from suppliers, reducing human intervention and paperwork and often resulting in improved performance for buyers and suppliers (Melville, Kraemer & Gurbaxani, 2004) (Sanders, 2005) (Subramani, 2004). Creating routine and repetition in the procurement system will increase the efficiency in this process and results in a higher level of electronic integration between buyers and suppliers (Choudhury ,Hartzel,& Kosynski 1998).  Operations with high usage of MRO supplies are more likely to use E-procurement (Croom, 2000). The B2B e-commerce solution is likely to vary with the number of buyers and suppliers, their connectivity and the purpose of trading (Cullen and Webster, 2007).

When designing/redesigning a procurement organisation, it is necessary to consider the different objectives and needs of strategic versus tactical procurement activities in making the decision to create a centralised/decentralised organisation. Procurement organisations in the marketplace cover the entire spectrum, from centralised to decentralised. A fully fledged E-procurement organisation provides such benefits as uniform processes and transactions, improved control, and less complex systems requirements, but at the same time can be bureaucratic and less flexible. A hybrid structure elevates procurement to a strategic role within an organisation but can pose challenges in terms of the level of transformation and transition required. The final structure should provide a balance between essential procurement needs and a company's organisational ability to change. (Deloitte Consulting, 2007)

**Readiness factors**

Another factor limiting usage is the readiness of supplier organisations to participate (Bartels; Hudson & Pohlmann, 2003). Buyers have indicated they are willing to use E-procurement, but they perceive that their suppliers are not able to participate. Buyers then have the choice of either limiting the extent of their E-procurement processes (reducing the benefits obtained) or finding new suppliers who are willing to conduct transactions electronically.

Organisational readiness and external pressure impact on e-business strategy (Mehrtens et al., 2001b). Many firms experience a number of major problems when actually implementing e-business projects due to the hasty decisions in the presence

of considerable media and software vendor hype, and often with no theoretical basis behind the determination of which applications are most appropriate (Cox et al., 2001).

To attain the greatest benefits, procurement processes should be evaluated and improved before adopting E-procurement tools (Presutti, 2003). Internet technologies enable integration with trading partners, yet amplify the need for fundamental organisational change (Power and Singh, 2007). B2B seller competence depends on change disposition (Rosenzweig and Roth, 2007).

**Supply factors**

E-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination (Liao et al., 2003). Different actors in supply chains have got different power, legitimacy and urgency to implement E-procurement; and E-procurement can have an effect on trust in supply chain relationships (Gattiker et al., 2007) (Klein, 2007). Lack of assistance and the structural inertia of large organisations in supply chains can be a disincentive to implement e-business (Zhu et al., 2006). Different industries show different propensities to E-procurement adoption, related to existing use of information exchange infrastructures prior to the advent of the internet (Cagliano et al., 2005).

The greatest benefits of e-business occur when its application is fully integrated throughout the supply chain (Currie, 2000). Some literature has pointed to the possibilities of greater integration and collaboration across e-business-supported supply chains (Croom, 2005) (McIvor and Humphreys, 2004). E-procurement is more

likely to be adopted if it is perceived that suppliers have capability to deal with it; there are difficulties in integrating information systems across firm boundaries in supply chains if suppliers lack capability (Bagchi and Skjoett-Larsen, 2003).

**Strategic factors**

A company may adopt e-technologies as part of its overarching business strategy, contributing to improving firm performance and increasing competitive advantage. The strategic use of e-business has been considered in several studies, and how e-business strategy aligns with the overarching business strategy of a firm. The internet will only become a powerful source of competitive advantage if it is integrated in firms' overall strategies (Porter, 2001). The role of IT has evolved from a productivity tool to a more strategic level (Wu *et al.,* 2003). An e-business strategy should specify the aims, goals and context of the application (Soliman and Youssef, 2001); these choices should be aligned with other organisational and managerial choices, and integrated with the organisation's processes (Graham and Hardaker, 2000). These studies suggest that if organisations are being strategic in their E-procurement adoption, they may have a specific E-procurement strategy, and that this will align with broader organisational strategy.

**Supplier participation and intentions**

Some suppliers apply pressure on their customers to become involved in the use of e-commerce to reduce costs, improve communications and gain operational efficiencies (Deeter-Schmelz,Bizzari,Graham& Howdyshell, 2001). Many buyers have indicated that they are not pleased with the online capabilities of their suppliers. An ISM/Forrester survey found that 36% of manufacturers rated their suppliers

online capabilities as very bad or poor  Yet for the procurement process to occur electronically both the supplier and the buyer need to be connected (often via the Internet).  Supplier strategies and willingness to take on new technologies such as E-procurement have been shown to have a positive effect on the utilisation of new technologies by the buying partner.

**External organisational pressures**

Suppliers can also exert pressure on their customers to use their systems and vice-versa (Joo and Kim, 2004).  To fully gain from the benefits of E-procurement, suppliers need to have as many of their customers as possible using their electronic ordering systems.

**Internal organisational support**

The continuous drive towards organisational efficiency and lowering the cost to conduct business is also driving the adoption of E-procurement (Lancioni; Schau & Smith, 2003).  Previous research has highlighted a number of internal factors influencing adoption of E-procurement: staffing levels, training in new technologies; encouragement from management and other departments (especially IT) (Osmonbekov et al., 2002); sufficient financial and resource backing (Joo and Kim, 2004); and adequate budget allocations to ensure all requirements are met.  It is proposed that internal organisational support will have a positive influence on usage of E-procurement.

**Network connectivity/integration**

Suppliers' systems also need to be integrated and compatible with their buyers' systems if the transaction process is to be automatic thus accruing the full benefits available (Rajkumar, 2001) (Croom and Brandon-Jones, 2004). Research has shown that network connectivity has an impact on the performance of an E-procurement system (Croom and Brandon-Jones, 2004). Therefore it can be expected that reliable and secure connectivity would increase a company's intentions to use E-procurement. It is proposed that electronic networks that are highly integrated between buyers and their major suppliers will positively influence the buyer company's intention to use electronic purchasing technologies (Dooley and Purchase, 2006).

**Task improvements/convenience**

E-procurement has been shown in many cases to improve the task of the procurement professional (Olsen and Boyer, 2003) (Rajkumar, 2001). In particular the amount of time spent on administrative tasks is reduced allowing procurement personnel to concentrate on more strategic issues (Rajkumar, 2001). If individual purchasing professionals perceive that using such technologies will make their tasks easier, then their intention to purchase electronically will be increased.

Analyze procurement behavior of end users "Spending analysis is the process of aggregating, cleansing, and analyzing corporate spending data for the purposes of reducing costs and improving operational performance" (Mitchell, 2004).

Functional silos, ad hoc management practices, weak technology support, and poor source data quality has worked against a firms' ability to conduct spend analysis

(Mitchell, 2004). Without spend analysis, a firm could not maximize its buying leverage, arrive at intelligent sourcing decisions, ensure compliance with supplier contracts, raise supplier performance, optimize budgeting and planning, and anticipate the impact of changes in cost, inflation, and other factors (Mitchell, 2004).

A key characteristic of third-generation solutions is visibility.  While the first and second generations of E-procurement systems offered separate solutions for different business functions, such as procurement and finance, the new generation is focused on building a value-based supply chain where all relevant information feeds into one system, driving efficiency, and business-rules driven based on the policies and priorities of the organisation. Business rules might include legislation, contracts, best practices and real time monitoring of spend compared to budget based on the procurement plan.(Tavi, 2008).

### 3.3.2 The relationship between organization sector and the use of E-procurement applications

Ortega et al. (2006) noted that some industries are characterized by greater experience in technology use, which facilitates the adoption of additional technological applications (including e-commerce). Additional research suggests that, industries that are more technologically advanced promote greater and more effective use of the appropriate technologies (Chewlos; Benbasat & Dexter 2001) (Dyer; Cho & Chu, 1998) (Goodacre and Tonks, 1995). Thatcher and Foster (2002) support this notion in their analysis of how information technology has evolved in firms operating in various industries. The authors noted, for example that industries

such as textiles tend to be less technologically advanced than other sectors such as electricity companies, which tend to be in the forefront of technology adoption.

Motiwalla *et al.* (2005) undertook a study to identify the factors that impact the adoption/use of e-business across three different sectors. The researchers concluded that similarities in the level of IT adoption were identified within sectors because engaging in a particular activity prompts firms to develop similar behaviour patterns.  This would explain why firms engaged in information-intensive activities are more likely to accept new techno logical innovations. These firms do so primarily because using advanced technologies provides greater strategic benefits for them (Yap, 1990) (Min and Galle, 2003).

The formulation of the hypotheses is as follows:

**H1:** **Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites**

**H2:** **Use of internet-based technologies is positively related towards enablement of E-procurement.**

## 3.4   E-procurement Drivers and Barriers

There is a plethora of literature espousing the benefits of an E-procurement solution (Minahan and Degan, 2001) (NOIE, 2001; ) (IDC, 2001a; ) (Konicki 2002; , 2001) (NOIE, 2000a) (NOIE, 2000b). These benefits would be identified as drivers for *any* implemented solution and include:

- Price reduction

- Improved contract compliance

- Shortened Procurement  cycle times

- Reduced administration costs

- Enhanced inventory management

- Improved visibility of customer demand

- Improved visibility of supply chain

- Reduced operating and inventory costs

- Negotiated unit cost reduction

- Increased accuracy of production capacity

- Enhanced decision making

- Improved market intelligence

The identified drivers and barriers focus on different aspects of the procurement process. They can be classified as having a:

- Cost focus (C)

- Strategic focus (S)

- Supplier relationship focus (R)

- Internal organisational focus (I)

- Technological focus (T)

- Enhanced internal company efficiency focus (E)

- External focus (Ex)

A summary of the drivers and barriers and their corresponding focus appear below in Table 3.1:

**Table 3. 1-E-procurement Drivers and Barriers Categorisation**

| Driver | Focus | Focus | Barrier |
|---|---|---|---|
| Price Reduction | C | T | Inadequate Technological Infrastructure |
| Negotiated Unit Cost reduction | C | T | Lack of skilled personnel |
| Improved Visibility of Customer Demand | S | T | Inadequate Technological Infrastructure of partners |
| Reduced Administration Costs | C | T | Lack of Integration with Business |
| Improved Market Intelligence | S | C | Implementation Costs |
| Reduced Operational & Inventory Costs | C | I | Company Culture |
| Enhanced Decision making | S | I | Inadequate Business Processes to support E-procurement |
| Improved Contract Compliance | R | Ex | Regulatory and Legal Controls |
| Shortened Procurement Cycle Times | I | T | Security |
| Improved Visibility of Supply Chain Management | R | R | Co-operation of Business Partners Capacity |
| Increased Accuracy of Production | E | I | Inadequate E-procurement Solutions |
| Enhanced Inventory Management | E | I | Upper Management Support |

Adapted from: Hawking and Stein (2004)

Cost is the primary focus of drivers, whilst technology and business partner integration are the main focus of barriers. A master list of drivers and barriers was developed from the above-mentioned Tables and used in the survey research.

Whilst drivers form the basis of business cases and provide a measure for success, it is important to consider the possible barriers companies may experience when adopting an E-procurement solution. A summary of these barriers, as identified in the literature is shown below in Table 3.2.

**Table 3. 2-E-procurement Barriers Literature review**

| Factor | Reference |
| --- | --- |
| Security of transactions | Gebauer *et al.*, 1998; PWC, 2002; Boston Consulting, 2002 |
| Lack of Supplier E-procurement solution | PWC, 2002; Gebauer *et al.*, 1998; Boston Consulting, 2002 |
| High cost of technology | PWC, 2002 |
| Lack of legal framework | PWC, 2002 |
| Lack of technical expertise | PWC, 2002 |
| Lack of E-procurement knowledge | PWC, 2002; Gebauer *et al.,* 1998; Boston Consulting, 2002 |
| No real business benefit identified | PWC, 2002; Gebauer *et al.*, 1998; Boston Consulting, 2002 |
| Data exchange standards lacking | PWC, 2002 |
| Lack of business relationships with suppliers | PWC, 2002 |

Adapted from: Hawking and Stein (2004)

### 3.4.1  E –procurement Drivers

According to Barua *et al.* (2001), in trying to bring about e-business transformation such as E-procurement, companies have generally focused too much of their attention on technology.   But systems do not work in a vacuum, and senior

managers must recognise the complementary nature of technology, business processes and e-business readiness of the value chain. They identified drivers encompassing three areas: E-procurement processes for customers and suppliers; IT applications for customers, suppliers and internal operations (all of which must be integrated); and the E-procurement readiness of customers and suppliers.

**Customer-related processes**

This involves the processing of information from customers and suppliers and the execution of tasks related to that information. The information from the customer usually comes in the form of a request or complaint. The response to customers request must be offered as quickly as possible (Barua *et al.,* 2001).

**Supplier-related processes**

The internet provides new opportunities for companies to develop relationships with suppliers as well as customers. The processes needed to fully develop mutually beneficial relationships with suppliers are myriad, such as the importance of developing the right supplier-selection criteria and of establishing metrics to evaluate partners (Barua *et al.*, 2001).

**IT application - Customer**

An effective E-procurement operation provides Web-site visitors with detailed information. The web site should have a frequently asked questions (FAQ) section and allow buyers and suppliers to carry out a variety of transactions. Buyers and suppliers must be able to submit, customise, modify and track orders; to pay online; and to receive automatic notifications about the status of orders. IT applications

must be aligned with the rest of the e-business model within a company, that is, customisation has to be integrated into the entire supply chain (Barua *et al.,* 2001).

**IT application - Supplier**

The success of E-procurement hinges on electronic linkages between supply chain partners and must provide features similar to those offered to customers including supplier evaluation reports (Barua *et al.,* 2001).

**IT applications - Internal Orientation**

Companies that have not exploited the Internet to improve internal processes are unlikely to succeed with IT applications aimed at customers and suppliers. Employees cannot be responsive to customers and suppliers if they do not readily access internal information through easy to use interfaces (Barua *et al.*, 2001).

**Systems integration**

Buyers, suppliers and internal applications require the glue of systems integration to hold them together.  A high level of integration throughout the company enables it to transmit, combine and process information from buyers and suppliers.  Large companies have a long way to go with regards to systems integration; however the benefits they stand to reap from doing so are substantial.  Integrated systems can revolutionise the supply process, but only with buy-in from both buyers and suppliers (Barua *et al.*, 2001) (Bennett,1993; 2003).

**E-procurement readiness of customers and suppliers**

The success of E-procurement initiatives depends on a company's, its customers and suppliers' readiness to engage in electronic interactions. Lack of readiness can be the weakest link in a company's value chain (Barua *et al.*, 2001).

**Costs and other implications**

Despite enthusiasm for the Internet, developing world companies should weigh up its advantages and disadvantages. There are financial costs as well time needed for researching on the Internet and maintaining the site. While a basic site can be cheap, finding business through e-mail and the internet will require knowledge of one or more international languages. The internet is not only a place for vigilance against scams, but the distance and low level of contact may make it harder to keep ethical procurement standards on child labour, the arms trade or the environment (Cater, 2001).

Therefore, the formation of the hypothesis is as follows:

*H3:    Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement*

**3.4.2  E –procurement Barriers**

Despite the many advantages the implementation of an E-procurement system offers both for organisations and for the role of the procurement professional currently, very few companies are using E-procurement. One of the main reasons for this is that solution providers have approached E-procurement from a technology, rather than a procurement perspective. This approach has a number of inherent problems not

least because, as research among early adopters has shown, there is an overwhelming consensus that procurement professionals must be involved throughout the solution development process. However, because the growth in the usage of E-procurement has not met expectations, most recent research has been investigating the barriers to E-procurement usage (Kheng and Al Hawamdeh, 2002) rather than factors which positively impact and influence adoption (Min and Galle, 2003).

The internet has effectively removed restrictions allowing companies to be networked together at low cost, and it offers greater flexibility as the requirement for private networks are eliminated (Attaran, 2001). With the opening up of connectivity, a lowering in the security of data has also occurred and concern over security is a factor limiting the implementation of e-commerce systems (Carter *et al.*, 2000) (Croom, 2000).

If a solution provider is not able to communicate effectively with key decision makers, nor understand their particular needs and concerns, then that vendor is unlikely to convince the organisation of the potential benefits of E-procurement. This is largely because companies believe they need to implement the whole system within their organisation, an approach which requires enormous investment in software, hardware, altering the LAN infrastructure, consultancy, installation and integration, reorganising the procurement department and co-ordinating the system with supplier technologies. Alternative approaches are now available to overcome these barriers. (Noto, 2001:15-16). Barriers to e-procurement adoption are summarised in Table 3.3 below.

**Table 3. 3-E-procurement Adoption Barriers**

| Category Barrier | |
|---|---|
| Economic | Little benefit to vendors |
| | Vendors' concerns about costs |
| | Vendors' fear of competitive bidding because of its adverse effect on price |
| | Insufficient internal resources to support e‑procurement |
| Operational | Vendors' concerns about required changes in work processes |
| | Lack of skilled personnel, particularly when the vendor is required to populate, update, and monitor electronic product catalogues |
| Environmental | Ineffective public infrastructure |
| | Restrictive or lack of regulations from domestic governments |
| | Differences in language, culture, and legal systems |
| Technological | Low or different levels of IT maturity among vendors |
| | Lack of technical and data exchange standards |
| | Lack of supporting IT infrastructure |
| | Vendors' concerns about the security of e‑procurement transactions |
| Relational | Lack of trust between buyer and vendor |
| | Vendors' skepticism of motives behind supply-chain management practices |
| | Lack of buyer influence on vendors |

Source: Shakir; Smith & Gulec (2007)

Literature review for e-procurement barriers and challenges has been summarized in Table 3.4 below;.

Table 3. 4-Literature Review on E-procurement Barriers and Challenges

| E-procurement barriers and challenges | Literature review |
|---|---|
| Immaturity of marketplaces services. Less developed marketplaces may not be able to offer a complete line of services such as electronic requests for quotes, reverse or forward auctions, dynamic bidding, and e-catalog creation and maintenance to subscriber firms. In order to gain a critical mass in membership, these marketplaces are reluctant to charge members high enough fees to cover the costs of delivering basic and other value-added services such as hosting services, logistics, payments, systems integration, outsourcing, and information technology consulting | (Kyte, 2000b) |
| Immature marketplaces. also do not understand the use of effective business models and may lack sophistication in the ways they approach potential member firms | (Furlonger & Landry, 2001) |
| Immaturity of suppliers. Buyer/channel master firms will need to deal with the technological immaturity of a number of suppliers and the latter's unpreparedness to respond to electronic procurement initiatives | (Hannon, 2001; Kyte & Miklovic, 2001; Min & Galle, 2001; Kyte, 2000b) |
| Firm size appears to be a factor. The Min and Galle study (2001) indicates that small firms are averse to innovation and tend to lack the technical knowledge/expertise, personnel, and IT infrastructure needed to respond to channel master requests to connect with them using certain electronic procurement arrangements. Immaturity of consulting services Consultant expertise on more advanced procurement initiatives is still spotty and | (Kyte, 2000b) |

| | |
|---|---|
| peculiar differences among industries complicate the matter even more. Larger and leading-edge firms are used to educating their consultants, but smaller firms will expect more current and directive guidance from so-called consultants than is usually available in the marketplace | |
| Pricing model immaturity. Earlier E-procurement vendors found that they have locked themselves into ineffective pricing models for both client licenses for buy-side applications and transaction charges for marketplace services | (Kyte, 2000b) |
| E-procurement software immaturity. E-procurement software is still limited in many ways. An IDC report revealed end user dissatisfaction with procurement applications because of lack of analytical capabilities | (Vesset, 2003) |
| Some E-procurement systems are unable to handle multiple data formats from major vendors such as Ariba i2, CommerceOne, among others, and enable painless backend integration with the firm's existing business applications | (Attaran & Attaran, 2002) |
| A number of E-procurement software packages could not manage the complexities of different jurisdictions, currencies, tax structures, etcetera; lack comprehensive payment and settlement features like sophisticated invoicing, payment, reconciliation, authentication, and security; and lack higher-end features like demand management and spending analysis capabilities and the ability to consolidate general ledger and invoicing systems | Kanakamedala,Ramsdell,& Roche, 2003; Roth, 2001) |
| Lately, software vendors have added functionalities to E-procurement software and automated spend analysis to help firms identify sourcing opportunities, track employee procurement transactions with various vendors, and assess compliance with corporate sourcing policies | (Bartels, 2004a, b) |
| Hard to keep controls and data management standards when adding other | (Aberdeen Group, 2001) |

| | |
|---|---|
| procurement systems; hard to take spend data from ecommerce-driven transactions and connecting it to the rest of the purchase transaction data collected through other systems; lack of base infrastructure to collect transaction data from more than one e-commerce application There are specific integration problems related to managing data coming from multiple systems interacting with the E-procurement package and from using different E-procurement packages as well. Interviews with procurement executives revealed the following concerns: difficulty of keeping controls and data management standards when adding other E-procurement systems; difficulty of taking spend data from e-commerce-driven transactions and connecting them to the rest of the purchase transaction data collected through other systems | |
| Lack of standard interchange formats for E-procurement. Standardization of codes used for product-related data and meeting different catalog content format requirements, for instance, will be specific challenges for E-procurement | (Ranganathan, 2003) (Rajkumar, 2001) |
| Internal end-user resistance to learn multiple procurement systems | Hope-Ross et al., 2000 |
| Employees are averse to learn software products that are in their nascent stage of development, knowing full well that significant changes are still forthcoming | Rajkumar, 2001 |
| Firms should be cautious about calculating the costs of E-procurement initiatives and should anticipate the less visible items that may encumber the firm | Rajkumar, 2001 |
| Hidden costs, which consist of any of the following items, could easily exceed licensing and maintenance costs by five or ten times implementation (for example: consulting fees); integration (for example: human resource management systems, equipment asset management, IT asset | (Hope-Ross & Reilly, 2000a; Hope-Ross et al., 2000): |

| | |
|---|---|
| management and financials); content aggregation and rationalization; catalog and search engine; transactions; supplier enablement; user training; business process reengineering; associated licensing costs (for example: additional database management system fees and integration-ware licensing); and administration (for example: requisitioning, ordering, matching, and payment processing | |
| Difficulty of eliminating maverick buying. Maverick buying refers to the purchase of goods or services without using the firm's formally defined processes and authorized vendors | Kyte, 2001c |
| | |
| Maverick buying has a number of deleterious effects: it deprives the firm of the ability to collect data on its employees' spend patterns and therefore loses visibility and control over its expenditures; and it raises procurement costs for the firm by as much as 20 percent compared to purchases negotiated by the firm's procurement professionals | Orr, 2002 |

Adapted from: Angeles and Nath (2007)

Therefore formation of hypothesis as follows:

***H4: Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement***

### 3.4.3 E-procurement Critical/Key Success Factors

E-procurement offers several advantages: Two-way communication of real-time financial and purchasing information without the need for electronic data

interchange(EDI),middleware or value-added networks. Buyer and seller management can identify trends and problems at any given time. Lower inventory levels are maintained by companies due to a shorter purchasing cycle and thus respond quickly to stock-outs. The greatest advantage, however, is that E-procurement can unite customers and suppliers over the web, creating a seamless partnership that helps streamline the most laborious processes (Roche, 2001).

For an organisation to become an E-enterprise and compete in E-commerce, it is not sufficient for its information technology and business strategies to be aligned; they must merge. The E-procurement strategy must include a combined technology and business strategy. The vision and leadership must come from the procurement department and identify the areas in which procurement technologies are most likely to benefit the company and provide it competitive advantage. The company must identify its core competencies and how procurement processes can support the core competencies. The technology strategy must be developed around supporting these core competencies. The technology group must also identify directions in which the technology is heading, such as back-end integration, and move the company to the technology forefront in support of the procurement processes (Rajkumar, 2001).

**Reengineer the Procurement Processes**

The benefits of E-procurement technology will not be apparent if there is simply an automation of existing methods of working. To gain the benefits of reduced costs, better sourcing, and so on, it is essential that a reengineering of the procurement process be undertaken. As a result of implementing Internet-enabled procurement technologies, organisations have found that their supplier relationships are

redefined, and that, in general, the number of suppliers is reduced. Hence, supplier consolidation must be planned for prior to the implementation of the E-procurement technology. Companies should gather input from stakeholders throughout the organisation, since they are likely to be affected by the reengineering of the procurement process. Companies should also communicate to the stakeholders that this might be a difficult process for everyone (Rajkumar, 2001).

**Involve Key Stakeholders**

Procurement affects every facet of the organisation; therefore key stakeholders from every affected department must be brought into the new system's planning process. Management must confer with these various groups, taking their inputs into consideration, as it carefully assesses those problems the company wants to address and the system's goals. It is also essential to bring key stakeholders on board early in the process, involving them from the very beginning. If the stakeholders are not behind the effort, users might not use the system, continuing to use existing legacy methods for procurement instead (Rajkumar, 2001).

**Focus on Segments**

Currently there is no single vendor offering solutions in the entire procurement arena from E-procurement to exchanges. Solutions from many vendors currently concentrate on MRO and indirect goods such as office supplies, IT equipment, and professional services. Many offerings do not provide support for direct goods, or for integrating suppliers across the supply chain. Enterprises might have multiple procurement strategies: one for direct material and one for MRO items. No single E-procurement tool from a vendor will meet an enterprise's strategy correctly. It is

necessary to segment and choose the vendor for each procurement strategy separately. For example, an organisation must choose one vendor for MRO items and another to support direct goods (Rajkumar, 2001).

**Identify Useful Measures**

Organisations should identify useful measures such as cost per transaction for MRO items, cycle time from requisition to fulfillment, etcetera. They should use measures that can be measured and are useful in predicting the success or failure of the system (Rajkumar, 2001).

**Manage Expectations**

Organisations should manage the expectations of the users and stakeholders by telling them the truth. The technology is still in a developmental stage and the functionalities may be incomplete. Everything that was possible with legacy systems might not be immediately feasible with the new environment. For example, in many instances changes to orders are harder to process with new technologies. In addition, the goods ordered with this technology might be limited to non-coded and MRO items and may be limited to a small percentage (as low as 10 percent) of MRO items in the initial pilot implementation. As acceptance of the technology within the organisation increases, the percentage of MRO items available will also increase (Rajkumar, 2001).

Procurement supports a delivery-relationship between buyers and sellers (Koppius, 1999). Being a broader scope than purchasing, procurement involves strategic

activities such as sourcing, negotiating with suppliers, and coordination with R&D (Eyholzer and Hunziker, 2000).

Alt *et al.* (2000) divided procurement into two phases, namely contracting and settlement. The contracting phase consists of sourcing and available to promise (ATP), and the settlement phase consists of transaction and delivery. Sourcing is the searching of requirement information of goods/services on the Internet, and ATP is the information flow with a supply chain, that is, the availability of goods and the shipping arrangement. Such information flow usually acts as an information exchange within the functions of quotation and negotiation. Transaction is the payment of goods/services, and delivery is the moving of goods/services from seller to buyer. E-procurement is more than putting procurement decisions online, its functions also include linking suppliers and buyers into the procurement network and rethinking of business processes such as transactions (Fisher, 2000a). With efficient information, such product information is structured by e-catalogs with which E-procurement can form a good basis in order to attract more buyers to the shopping site (Avery, 2000a).   On the other hand, depending on the characteristics of product or service, E-procurement might not be suitable for some high-specification goods or services where tight relationships between buyers and suppliers are essentially required (Fisher, 2000a). As a start, it is always critical for managers to ensure that their workers are motivated to use the E-procurement system when introducing it as well as the existing paper-based system (Timmins, 2000). In the literature, many researchers have studied the impact of e- procurement on strategic sourcing. Croom (2000) carried out a Delphi study to explore the impact of Web-based procurement systems on MRO procurement and classified them as "*operational*" and "*strategic*"

benefits. The operational benefits include the ability to reduce overall procurement costs and the improved audit of each transaction within the process. The strategic benefits refer to greater influence and control over procurement expenditure.

From the two findings of Alt *et al.(*2000), Koppius (1999) and Yen and Ng (2003), they derived a classification of business processes of procurement: pre-procurement, procurement, and post-procurement. Pre-procurement mainly involves sourcing, procurement consists of quotation, negotiation, order placement and transaction, and delivery is the process of post-procurement.

Sourcing is the searching for required information of goods/services on the Internet with e-catalogs. A database system is required to store the product records of the e-catalogs and text; or image-based search engines are sometimes applied to facilitate the search results. A quotation is a request directed to the supplier of cost according to the product specification of buyers, and negotiation allows buyers to inquire about anything concerning with the deal. Both quotation and negotiation are supported by electronic communication infrastructures such as e-mails and message/discussion boards. Order placement allows buyers to specify the product requirements, payment method, and delivery details in the electronic modifiable order form and such information will be stored in the database system. For transactions, there are traditional and electronic payments.

From what other researchers have done, Yen and Ng (2003) summarized a two dimensional table with a planning or brainstorming purpose illustrating the impact of buyer and seller with respect to the business process of procurement, with the

classification of impact as strengths, weaknesses, opportunities, and threats (SWOT). Strengths and weaknesses are for measuring the internal performance of the procurement process, for example, efficiency and effectiveness, and external opportunities and threats are identified in the electronic environment in which the procurement is operating. For instance, during negotiation, buyers can benefit from a "*quick* and *timely*" enquiry in which communication between a buyer and a seller is enhanced, saving time with electronic and automated inquiry forms.

However, both the buyers and sellers need to have basic computer skills to use the electronic inquiry forms, and buyers may not trust the Internet to provide personal information to the sellers. Therefore, in order to minimize such weaknesses and threats, as well as to maximize the benefits that can be gained from the migration, careful planning is essential. Yen and Ng (2003) proposed a four-phase migration model with technical, security, and financial requirements, as a plan for the migration of the procurement process onto the Internet.

Yen and Ng (2003) made the assumption that not every company would adopt EC fully while migrating their procurement functions onto the Internet, companies may not necessarily need to implement all four phases or start from the first phase, depending on the existing technical requirements of the companies. One should be aware that the degree of expertise, intangible costs, complexity of information, security, and uncertainties increase from phase one to phase four, therefore careful planning is necessary with the migration of a procurement process on to the Internet in order to achieve a positive impact . Weaknesses and threats are assumed that they will be minimized with the four-phase migration-planning model.

E-procurement can change the normal tools used by companies for sourcing and procurement materials, but by itself it does not change the methods. It is not only an enabling technology (as fax and e-mail were in the past), but it can cause disruptive modifications of the internal and external relations of a company.  As a matter of fact, E-procurement applications can add no value into companies or, paradoxically, they can destroy value, if not accompanied by a thorough revision of the strategic role of the organisational functions involved in the transactional process and by a structured re-engineering of the decision-making activities and roles performed by the involved actors (Brynjolfsson, 1993).

How can we guarantee that these profound changes can really turn out in higher efficiency and competitiveness? How can we carry out a correct size of the new re-engineered processes before they 'go live'? The first important step is the development of a robust strategy, which needs to be consistent with the internal structure of the company and with its role within the extended chain where it operates. A good strategy highlights the capabilities and competences of the organisation and their potentialities in sustaining the adoption of E-procurement systems. It is then fundamental to carry out a thorough analysis and redesign, whenever necessary, of the business and operating processes across the company's value chain in order to highlight which activities and functions could benefit from the adoption of e-Technologies such as E-procurement.  From the methodological point of view, this analysis and review phase can be highly enhanced and fostered thanks to the emergence in the last decade of business process modeling (BPM) and simulation (BPS) methodologies and tools which enable a

rigorous mapping of current and future organisation processes and a quantitative and objective preliminary evaluation of the expected pay-offs resulting from the re-engineering activity and the adoption of new IT tools such as E-procurement. (Caridi; Cavalieri; Diazzi & Pirovano, 2004).

Conducting spend pattern analysis prior to business process re-engineering helps the firm understand who is doing the spending, how much they are spending, on what they are spending, and with whom they are spending. Providing such visibility precedes assigning ownership to spending business processes and final accountability in achieving savings targets in conjunction with the use of re-engineered procurement processes. Redesigning business processes looks into rationalizing the flow of transactions and information both within the firm and outside its boundaries, particularly in relationship with its suppliers, with the enabling support of information. A summary of literature on E-procurement success factors is listed in Table 3.5 below;

**Table 3.5-Literature Review E-procurement Key Success Factors**

| E-procurement Key Success Factor | Literature Review Content |
|---|---|
| Deploy a balanced catalog selection strategy (i.e.that is, choosing from buyer-managed, seller-managed, and electronic marketplace-managed catalogscatalogues) Firms need to craft a portfolio approach to managing their relationships with trading partners | (Hope-Ross *et al.,* 2000) |
| No single E-procurement solution can adequately address the need for a firm to purchase different types of goods or services | (Hope-Ross *et al.,* 2000; Rajkumar, 2001) |
| Firms will need to consider three major types of electronic environments for E-procurement: (1) buy-side applications; (2) sell-side applications; and (3) | (Davila *et al*., 2003; Kyte, 2000a, b) |

| E-procurement Key Success Factor | Literature Review Content |
|---|---|
| marketplacemarket place services | |
| Analyze procurement behaviorbehaviour of end users "Spending analysis is the process of aggregating, cleansing, and analyzing corporate spending data for the purposes of reducing costs and improving operational performance" | (Mitchell, 2004) |
| Functional silos, ad hoc management practices, weak technology support, and poor source data quality have worked against firms' ability to conduct spend analysis | (Mitchell, 2004) |
| Without spend analysis, a firm could not maximize its buying leverage, arrive at intelligent sourcing decisions, ensure compliance with supplier contracts, raise supplier performance, optimize budgeting and planning, and anticipate the impact of changes in cost, inflation, and other factors | (Mitchell, 2004) |
| Consolidate suppliers and contracts. Good procurement practice requires identifying which products or services should be sourced from specific suppliers and thus, consolidate suppliers and contracts | (Hope-Ross, 2001c) |
| Lion Nathan, an Australian-based beverage firm, consolidated its sea freight spending and contracts with a single provider and achieved significant savings. Its operations in New Zealand, China, and Australia all used international sea freight service | (Bushell, 2004) |
| Involve preferred and strategic suppliers in planning for E-procurement. Strategic suppliers of buyer firms usually constitute 20-40 percent of their supply base. These suppliers offer the buyer firm the greatest chances of E-procurement success. Buyer firms should further narrow down the list of candidate suppliers for E-procurement initiatives by considering only those with previous E-procurement engagements with other customers, those | (Kyte, 2001a, b, c) |

| E-procurement Key Success Factor | Literature Review Content |
|---|---|
| interested in emerging innovations, and those that have the local decision-making authority to approve the investments and business process changes the buyer might require | |
| Select E-procurement software and services, following the development of a solid business case. Firms need to develop a solid business case for subscribing to E-procurement software and services through cost-benefit analyses | (Hope-Ross et al., 2000) |
| There is a wide variability in the price of E-procurement applications, from about $10,000 (Trilogy software) at the low end and from $500,000 to $2 million (CommerceOne solutions) at the high end | (Hope-Ross and& Reilly, 2000a) |
| Firms may have to deal with multiple vendors, each specialising in different E-procurement functionalities | (Rajkumar, 2001) |
| Reduce the number of suppliers. Hackett studies show that firms that were most successful with their E-procurement practices also cut back on the number of vendors they had contracts with per billion dollars in spending | (Roth, 2001) |
| Understand preferred supplier technology plans and their ability to support E-procurement initiatives. Buyers will increasingly rely on their suppliers' ability to connect with them electronically and support the catalogcatalogue creation and maintenance issues involved in E-procurement. Thus, buyers need to carefully select suppliers who are in the best position to respond to their E-procurement deployment plans | (Hope-Ross, 2001b; Rajkumar, 2001) |
| Suppliers may prefer one E-procurement system over another on account of transaction fees being charged by e-marketplacesmarket places or catalog managers | (Hope-Ross, 2001a) |
| Thus, buyers need to know if transaction fees are an issue for suppliers | (Hope-Ross et al., 2000) |

| E-procurement Key Success Factor | Literature Review Content |
|---|---|
| because, if this is so, these additional costs will very likely be passed on to the buyers. Certain suppliers will not be able to keep up with buyers' technology requirements | |
| Buyer channel masters need to be prepared to underwrite the costs of getting valued but under-equipped suppliers to get on board major E-procurement initiatives. Enforce on-contract buying with preferred suppliers. PricewaterhouseCoopers calculated that a firm could gain savings of 30-40 percent of non-direct spending if they buy only from preferred suppliers | (Hope-Ross and Reilly, 2000a) |
| Certain procurement software products are designed to automate a firm's procurement processes and policies and thus, direct order requests for specific goods to preferred suppliers | (Kanakamedala et al., 2003) |
| Re-engineer all affected business applications effectively. Significant benefits from E-procurement come from reengineering procurement business processes and subsequent modifications in employee behaviour and relationships with suppliers. Use of an E-procurement application is secondary only to meeting change management requirements in affected procurement business processes. | (Attaran and& Attaran, 2002; Supplier Selection & Management Report, 2001; Rajkumar, 2001; Hope-Ross and& Reilly, 2000a; Lin and& Hsieh, 2000.) |

Adapted from: Angeles and Nath (2007)

Firms need to develop a solid business case for subscribing to E-procurement software and services through cost-benefit analyses (Hope-Ross *et al.*, 2000). There is a wide variability in the price of E-procurement applications from about $10,000 (Trilogy software) at the low end and from $500,000 to $2 million (CommerceOne

solutions) at the high end (Hope-Ross and Reilly, 2000a). Firms may have to deal with multiple vendors, each specializing in different E-procurement functionalities (Rajkumar, 2001).

Therefore, the formation of hypothesis is as follows:

*H6: Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement*

### 3.4.4 Benefits /Transformations resulting from E-procurement initiatives

The promise of lower costs of goods and services purchased, lower inventory levels, shorter lead times, and improved communications has made Web procurement one of the hottest topics of e-commerce. Efficiencies and reducing costs for the acquisition and ongoing management of business expenditures, Aberdeen estimates that a mid-size organisation can expect to save almost US$2 million per year through the use of E-procurement technologies (Attaran and Attaran,2002).

The potentials of E-procurement have already been proven in a number of studies (Aberdeen Group, 2001) (Eyholzer and Hunziker, 2000) (Arthur Andersen Business Consulting, 2001). According to these studies, E-procurement enables companies to decentralise operational procurement processes and centralise strategic procurement processes as a result of the higher supply chain transparency provided by E-procurement systems.

Typically, a company's procurement function is subdivided into strategic and operational processes since activities and priorities in these two areas are entirely different (Kaufmann, 1999) (Lamming, 1995).

Supplier management, the pooling of purchase requisitions and procurement-oriented product development are tasks that are typically assigned to strategic procurement. Prior to E-procurement, strategic procurement often had to deal with administrative routine work as well, such as individual transactions, converting purchase requests into purchase orders or ensuring the correct allocation of invoices received.

Strategic aspects are frequently neglected in the process, with the buyer having little influence over the choice of suppliers and the purchased products. The use of Internet technologies in procurement is aimed at realising faster and more efficient operational procurement processes which bypass the procurement department and enable those people to concentrate on more strategic tasks (Giunipero and Sawchuk, 2000).

In E-procurement, requesters directly search for and select products in electronic catalogs which are authorized and negotiated by strategic procurement in advance, thus reducing operational functions (Puschmann and Alt, 2005) (see Figure 3.6 below).
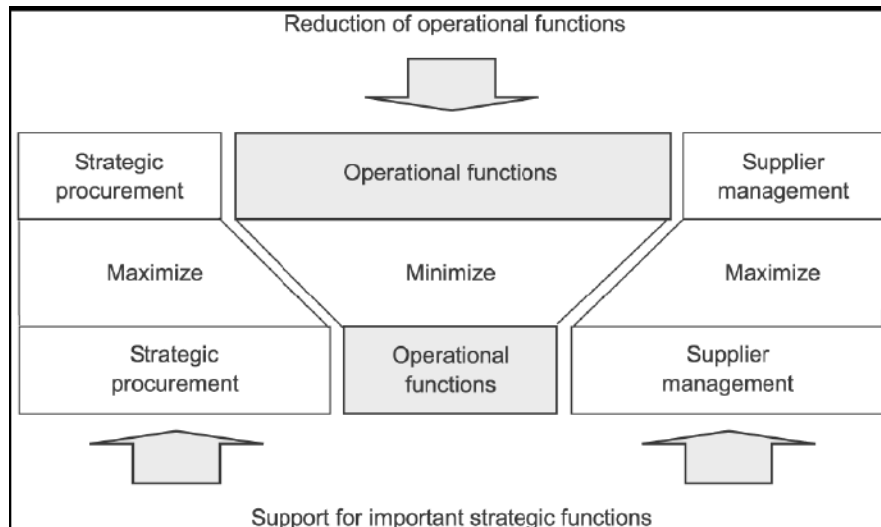
**Figure 3. 6- Transformations/Effects of E-procurement adoption**

**Source: Puschmann and Alt (2005)**

Croom (2000) identifies both operational and strategic benefits to using electronic commerce for procurement MRO items. The operational benefits include reduction of administrative costs in the procurement process and improved audit trails of each transaction throughout the process. Strategic benefits include having greater influence and control over expenditures, raising the profile of the procurement function, and having a greater opportunity to manage the supply base. Many procurement executives believe that the long-term benefit of E-procurement will be the freeing of procurement resources from transaction processing to refocus them on strategic sourcing activities.

Significant operational benefits, such as the following can be gained: lower transactions costs; lower staffing requirements; shorter procurement cycles; reduced inventory levels; higher degree of transparency; and increased communication and collaboration between supplier and buyer companies (Davila *et al.,* 2003) (Turban;

King; Lee; Warkentin & Chung, 2002) (Osmonbekov; Bello & Gilliland, 2002) (Carter *et al.*, 2000) (Rajkumar, 2001) (Min & Galle, 2003).

**Linkages to Strategy**

At a strategic level, managers can identify both the scope of their supply chain and range of partners that they seek to involve in E-procurement, as well as the form that involvement takes. Once identified, over time the proper mix of e-sourcing, e-co-ordination and e-community in the supply chain can be developed. Barriers limiting adoption, such as limited levels of familiarity and significant up-front investments, are likely to decrease over time as applications diffuse more broadly. Finally, there appears to be growing interest in private exchanges (for example, intranets and extranets). A careful examination of both the financial and broader competitive benefits (in addition to comparable costs) of these will encourage the development of effective long-term strategies. However the procurement function cannot operate in isolation in a company, it is important that the procurement function operates in conjunction with the company, and that the procurement strategies are consistent with corporate competitive strategy (Watts; Kim & Hahn, 1995). Rajagopal *et al.* 1993:14) state that "By developing a procurement strategy that focuses on the character of its competitive strength, a firm can enhance its market position". If procurement is to become strategic, there is need for the procurement practices to stem from and be linked to the company's priorities (Narasimhan and Carter, 1998).

E-procurement offers the greatest opportunity for companies to improve processes, reduce costs, and increase productivity across the supply chain. It offers two major benefits — efficiency and effectiveness. Efficiency is seen in lower procurement

costs, reduced unauthorized buying, faster cycle times, and better integration with the back-office systems. Effectiveness is realised through higher quality procurement decisions and increased control over the supply chain. With Web-based procurement, businesses can eliminate the need to reenter data from paper documents. This reduces clerical errors since every re-entry of data is a potential source of error. Web-based procurement can also shorten the lead-time between receipt and fulfillment of orders, thus reducing inventory. When invoice data are transmitted electronically, company cash flow is improved. Trading information obtained from historical data built from Web-based procurement transactions is an invaluable source of market research and strategic information.

E-procurement has also become an enabler for many of the best practices as well as a best practice in its own right. Automating and distributing transaction processing into the hands of employees frees the procurement team to do more value-added work. The emergence of E-procurement makes use of new tools such as reverse auctions, global sourcing, aggregated volumes, and fast and inexpensive communications, enabling more companies to implement best practices and save money. For example, reverse auctions are used as a powerful negotiating tool to enable multiple users to bid and sell to individual buyers, greatly increasing the competition and improving the purchase price for buyers. Companies are using reverse auctions to drive purchase costs down (Attaran and Attaran, 2002).

Attaran and Attaran (2002) identified the following three types of benefits accruing to e-procurement adoption.

Strategic benefits comprising:

- Consolidate procurement practices that will lead to greater discounts and better service from suppliers

- Accelerate the flow of important information between buyers and suppliers

- Reduce administrative hours, freeing staff to do other work

- Fast response to highly competitive new market entrants

- Boost compliance, driving spending to preferred suppliers by buying from static catalogs, dynamic catalogs. and negotiated contracts

- Improve the chances of winning new business

Opportunity benefits comprising:

- Enhance image and improve corporate trading relationships

- Improve buyer/supplier relationships

- Better accuracy

Operational benefits comprising:

- Improve financial control by making it easier to match orders

- Eliminate paperwork and its costs

- Improve auditing and better security by enabling staff and auditors to verify and track the movement of orders through the system

- Shorten the delivery time by eliminating the need to wait for paper documents by mail

- Eliminate time zone obstacles

- Reduce inventory levels

- Maximize labour by empowering the employees to make transactions that are correct for their work

- Enhance efficiency at every stage cutting overhead, cycle-time delays, buffer inventories, and errors

- Permit flexible access anytime, anywhere

- Ensure deliveries on time, every time

Eakin (2003) identified benefits such as transactional, compliance, management information, price and payment accruing to e-procurement adoption. These drivers are interdependent, each enabling the others' delivery. The interaction between them is important, implying that the achievement of tangible benefit in the form of price improvement is reinforced at each successive negotiation by the improving interaction of the drivers.

**Transactional Benefits**

E-procurement enables the purchase-to-pay process online. Electronic processing leads to great time savings and efficiency due to:

- Global, automated processes incorporating best practice and eliminating unnecessary activities

- E-enabled relationship with suppliers, which speeds procurement cycle times and facilitates supplier performance improvements

- Greater data accuracy, which minimizes ordering inaccuracies and provides the essential foundation for better management through measurement and analysis

**Compliance Benefits**

In many cases within an organisation, compliance and maverick spending is a significant issue – not because employees deliberately purchase outside of preferred arrangements, but rather through lack of awareness. E-procurement addresses this through tools such as catalogs and standard order processing and approval processes. Compliance will be achieved due to:

- A simple and quick requisition-to-payment process including a user-friendly interface and pre-sourced catalogs tailored to the requirements of the individual user

- A simple and quick strategic sourcing process with standard procurement processes and tools, as well as easily accessible information

- The E-procurement system, the only procurement mechanism available

**Management Information Benefits**

The fact that key information (cost center, commodity codes, etcetera) is hard coded against the user, dramatically reduces coding errors and provides highly detailed and easily accessible data. This is essential to maximize the financial benefits of strategic sourcing. A successful E-procurement implementation will provide high quality, detailed management information and will negate the need for data warehousing or resource-heavy data mining.

**Price Benefits**

The ability to prove to your suppliers that you are using E-procurement as a tool to ensure end users do honor their contract status will enhance ability to negotiate down prices through:

- Greater enhanced capture and therefore, reliability of spending information

- Increased confidence that spending volumes can be guaranteed from increased compliance with the system, thus allowing volume price breaks and discounts to be achieved

**Payment Benefits**

The successful operation of the first four benefits enables electronic payment of invoices. This includes the ability to better control the business cash flow and to manage the efficient payment of suppliers due to more streamlined procurement processes providing more timely and accurate information to the accounts payable department. Potential benefits include reduced manpower (considered as a "hard" benefit only if improvements lead to head count reduction) and reduced spending on postage and stationery. During negotiations the procurement manager can more credibly guarantee the supplier a level of prompt payment, which was not possible prior to E-procurement.

Giunipero and Sawchuck (2002) noted that, firstly, the Internet can be used as a research tool, allowing the procurement professional to "Shop around" and compare suppliers' capabilities and to peruse online catalogues. Secondly, the Internet can be used to generate savings. Procurement via the Internet is an effective way to reduce otherwise high transaction costs for low-value items such as maintenance, repair, and operating items. Thirdly, Internet-based procurement tools can be used not only to reduce transaction costs, but as a means of reducing prices paid for purchased goods/services. The buyer organisation can use the Internet to solicit bids from a wider range of potential bidders than is possible using traditional methods. This could increase the organisation's chances of getting a better price. Fourthly, the

buyer organisation can use an e-marketplace and participate in online auctions, both reverse (where a buying firm makes its purchase needs known online) and forward (where a selling firm puts goods/services up for sale on-line). Fifthly, e- procurement can be used as part of an effort undertaken by the entire supply chain, from the final customer back to an organisation's suppliers.

Advanced E-procurement provides additional benefits beyond control and cost savings. These include a new level of supplier selection; supplier performance management; value networks between buyers and suppliers, among suppliers and among buyers; and fraud protection through utilisation of built-in approval and business rules processes (Tavi, 2008).

To take full advantage of E-procurement, companies should tie the procurement system into not only their financial system, but also the systems of their customers and suppliers. This can make the procurement process paperless from one end of the value chain to the other. Employees can check the status of orders whenever they want and management always has current information as financial data is automatically updated throughout the process (Roche, 2001).

Some of the latest E-procurement software has built in rules on employee purchasing authorisation and single-click access to trading partners. Therefore if an employee is authorised to purchase a printer, the E-procurement system can automatically direct the buyer to the vendor with the lowest price. It can also ensure that the employee does not exceed his or her level of authorisation. Currently, large

companies are leading the way in E-procurement. Because of the costs involved smaller companies are lagging behind (Roche, 2001).

Croom and Johnston (2003) concluded that internal customer satisfaction is central to the success of E-procurement deployment and is a significant determinant of the cost benefits to be gained from its adoption. Most organisations spend at least one-third of their turnover/income on the purchase of goods and services (Zenz and Thompson, 1994) (Killen and Kamauff, 1995).

Boyer and Olson (2002) found that costs were reduced and inventory accuracy improved through E-procurement tools. Using a large-scale survey, Pearcy *et al.* (2004) found that there is not a single solution to successful implementation of E-procurement systems. Implementation must be designed to support the corporate goals and strategies of the individual firm.

### 3.4.5 The Bottom Line: E-procurement and the Total Cost of Procurement

According to Eakin (2003), E-procurement can be measured. Measurement drives behaviour and is a key element in making a successful program and is just as relevant to projects that are already underway. Consistency, discipline, and accuracy must be applied to obtain meaningful results. Measurement provides new and reliable input into sourcing negotiations and presents an accurate picture of procurement as a basis for improved management, whatever the organisation's starting point. In order to calculate recurring benefits, key savings drivers need to be identified and measured against. The principle metrics that will demonstrate a return on investment (ROI) in E-procurement are:

- Hard benefits (directly measurable) that are required to deliver enhanced shareholder value and thus gain approval, such as price savings and process cost reduction

- Soft benefits (indirect benefits) whose direct effect on cash flow may be difficult to quantify accurately (i.e. individual time freed up through more efficient processes), but may well be indicative of progress

- Intangibles, which are beneficial but are not directly measurable in financial terms. It is important not to misclassify soft but measurable benefits as intangible, just because measurement may be more difficult. Intangibles include

- Cultural **change** is recognition of strategic sourcing as a longer-term market differentiator, end-user attitude shift, and ease of implementing world-class internal processes

- E-**platform** - E-procurement as a step towards value-adding structures

- Financial **approval for all spending** ability to ensure that all spending meets organisation standards

- High **visibility of supplier performance** - live feedback from end-user to buyers

As Cutler and Sterne (2000:1) framed the issue "The traditional management adage is that you cannot manage what you do not measure. The e-Business addendum is that you cannot measure what you do not define". Yet, as Heath (2001:1) commented, "Traditional methods for calculating return on investment have been, for the most part, ill suited to measuring the strategic impact of e-business". Indeed, gauging the return on investment for e-commerce projects and applications, in the

view of Goldberg (2001:1) presents decision makers with a "Gordian knot" because the benefits are the new processes they bring. Yet, because the processes are new, existing measurement tools may miss those benefits.

Yet, for all the benefits outlined, there are many companies that adopt a wait and see approach to the implementation of E-procurement) (Davila *et al.*, 2003).  As Bartels *et al.* (2003:6) point out, "While the data provides evidence that progress is being made in terms of online adoption and usage, those averages disguise a more complex picture in which certain segments of companies vary vastly in results. Large service sector firms are making the most progress and seeing the best results, while the other segments, small manufacturers in particular, are lagging in online purchasing and tool usage."  With such differing adoption practices between different industries, research conducted within specialised industry segments helps develop an understanding for that particular segment (Dooley and Purchase,2006).

The E-procurement implementation will be declared a success when the project has delivered on time and within budget, and business benefits have been realised. Appointment of a third party to track and monitor the progress of the E-procurement project is necessary.  This will ensure that realisation of benefits is enforced and that the business and project enablers for change are delivered. This person should drive and enforce the realisation of benefits; ensure benefits are measured accurately; and, ensure that the business and project enablers for change are delivered – a user-friendly system (project enabler) and appropriate discipline for not complying with governance rules (business enabler).

Good strategic sourcing will facilitate the realisation of E-procurement benefits by ensuring that sound contracts are in place for use by E-procurement. The corollary of this approach is that the E-procurement project should not have to shoulder the burden of the cost of an ERP system with which it will almost certainly co-exist via interfaces, but which is not required to practice effective E-procurement.

In an increasingly global economy, companies cannot afford to ignore the myriad benefits (increased control, costs savings, efficiencies, supporting green initiatives and good corporate citizenship) that world class procurement practices offer.

Therefore, the formulation of the hypothesis is as follows:

**H7:    *Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement***

**H8:    *CBZ Bank is ready for uptake of E-procurement***

### 3.4.6  Future of E-procurement

The future of E-procurement will be focused on the following:

Strategic sourcing

- Focus on showing the value realised
- Greater efficiencies will be realised as well

System integration

- Integration of E-procurement systems with other mission critical systems, such as financial and property management

- Greater internal transparency in terms of asset management

- Real-time access to data across the entire organisation

- Robust technology platforms enable mobile computing in the field
  Agency-specific e-catalogues

- Support unique agency procurement need

## 3.5   Strategic Sourcing

### 3.5.1  Strategic Sourcing – Definition

For purposes of this paper, Strategic Sourcing will be defined as the process of evaluating, selecting and aligning with suppliers or consortiums of suppliers to achieve operational improvements in support of an organisation's strategic objectives. Strategic sourcing is applicable to almost every procurement activity even though it is usually more relevant to direct materials because of the inflexible nature of price.  However companies need to consider all purchases as candidates for Strategic Sourcing.

Factors such as quality, shortened and reliable cycle times, technological capabilities and services, and through strategic sourcing the business also gets the added benefit of critically examining its entire value chain and identifies those value reducing activities or processes which can either be eliminated or put in

the right hands to transform them over as value enhancing activity or process (Mookherjee,2008).

The following sections provide a review of procurement literature in terms of the main elements of strategic sourcing:  strategic elevation of the procurement function; internal coordination with other functions within the company; information sharing and long-term relationships with and development of suppliers.

### 3.5.2  Sourcing as a Strategy

Over the years, sourcing primarily meant procurement, a peripheral corporate function with less strategic importance. However, strategic sourcing opens up brand new sources of competitive advantage. All of this can happen however, only when sourcing is elevated to a level of importance where it becomes part of the organisation's overall strategic planning process. Sourcing is no longer optional, and as a strategic approach has become a precondition for business success and in some industries, a prerequisite for survival. The challenge of modern organisations is to integrate sourcing as an integral part of the business strategy (Mookherjee, 2008).

In other words, sourcing in the strategic sense no longer refers to getting materials at desired prices, but a decision incorporated into the operating strategy of the firm, allowing procurement to support or even improve the firm's competitive advantage (Zeng, 2000).

In designing their sourcing strategy, firms have choices on how they integrate these suppliers into their procurement procedures, either via systematic sourcing or spot

sourcing. Systematic sourcing involves negotiated contracts and a long-term relationship between buyer and seller. Spot sourcing addresses a buyer's objective to fulfil an immediate need at the lowest possible cost; therefore, it does not require any long-term relationship between buyer and seller.

Therefore, combinations of these approaches, in the form of strategic sourcing, can lead to sound relationships with suppliers that can provide improvements in the firm's performance in many areas, such as total cost reduction, better product quality and faster delivery (Zeng, 2000). The design of electronic markets plays a role in assisting in efforts in strategic sourcing.

### 3.5.3  Dimensions of Strategic Sourcing

**Strategic elevation of procurement function**

The responsibilities of Procurement can be divided in general into three main groups: transactional, operational and strategic tasks.

At the transactional level, Procurement is expected to provide for the company's procurement needs by ensuring suppliers respond with on-time, high-quality deliveries.  Transactional activities are collectively related to the purchase order cycle and include order generation, order distribution, expediting, shipment tracking, goods receipt and invoice processing.

At the operational level, Procurement is involved in selecting suppliers, deciding what quantities to buy and how to move materials, communicating these decisions to

suppliers and monitoring supplier conformance (Cavinato, 1991). Operational tasks of Procurement also include developing supporting systems to streamline the procurement process. These activities are becoming more and more key as companies move away from competitive bidding and mere tendering towards differentiated supplier strategies in accordance with changing needs of the marketplace.

Out of this group of tasks, the strategic role of Procurement is currently the focus of attention. Research on strategic procurement can be divided into three groups (Ellram and Carr 1994), which include:

- Specific strategies employed by the procurement function. In this context, procurement strategy relates to the specific actions that the procurement function takes to achieve its objectives and oversees the process of implementing, evaluating and controlling strategic and operating procurement decisions (Carr and Smeltzer, 1997).

- The role of Procurement in supporting the strategies of other functions and those of the company as a whole. Therefore, Procurement activities must be aligned with the strategy of the company (Freeman and Cavinato, 1990)

- Use of Procurement as a strategic function of the company

Procurement can be expected to have an impact on the company's strategic sourcing only if it functions at a strategic level (Ellram and Carr, 1994) and is involved in planning at the company level (Freeman and Cavinato, 1990). Alignment with company-wide objectives will foster Procurement to have a key role in the corporate quest for value growth (Reck and Long, 1988) (Anderson and Katz, 1998).

It can serve as a source of information about suppliers, status of the supplier industries, economic conditions, market conditions and international trends, thus providing critical input to the company's strategic planning processes and its operations (Freeman and Cavinato 1990).

**Internal Coordination**

Procurement is a critical part of inter-functional coordination processes (Kraljic, 1983). Yet, this has been ignored in many companies until recently. As a result procurement has been viewed as one of the last frontiers of opportunity in the company's integration of functions for full coordination and control of product, production and logistics activities (Cavinato, 1991). The interdependence between Procurement and other functions is becoming stronger as procurement increasingly takes part in activities that have been traditionally assumed to be other functions' responsibilities, such as product/service design and development. In return, the traditional procurement decision of which supplier to select is expanding to involve departments other than procurement, especially when long-term relationships and outsourcing are utilised (Cavinato, 1991).

The resulting increased internal coordination is evident from greater integration, more top-management involvement (Kraljic, 1983) and stronger cross-functional teams (Kraljic, 1983) (Van Weele et al., 2000). Earlier research has shown that better integration among different functions lead to price reduction and savings, inventory reduction, reduced clerical work and better delivery and service. Kraljic (1983), Croom and Johnson (2003) identified five main improvements in the procurement process that E-procurement enabled: supporting managers' budgetary control, offering robust process performance with fewer failures, offering far greater

transparency and accessibility across the whole process for all stakeholders, improving systems reliability, ensuring compliance to process, and improving management information reinforced user compliance.

**Information sharing**

The study of Tan, Lyman, & Wisner (2002) 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. Earlier studies suggest that the potential of opportunistic behavior is reduced when both parties agree to share information on a regular basis (Pint and Baldwin, 1997). Communication and information exchange are perceived as critical to long-term relationships (Monczka *et al.,* 1998) (Stank; Crum & Arango, 1999) and provided examples from various companies on how information sharing positively influences supplier development programs. An excellent review of the benefits of information sharing is provided by Sahin and Robinson (2002).

Informational benefits provide a wealth of information that is otherwise unavailable or too cumbersome to obtain. For example: information on top vendors by transaction amount and number of transactions; most ordered products by total transaction amount; number of transactions and average transaction amount; distributions of transactions in term of cards; and, in-state and out-state purchasing generates management/tracking reports using the bank-provided data and PC software to ease periodic monitoring and control.

The availability of more accurate and up-to-date procurement information to internal operating departments significantly helps in material forecasting, planning, and scheduling and inventory management. This also strengthens the relationships with suppliers and leads to the development of procurement partnerships through long-term contracts, and increases the depth and breadth of information exchanged between the suppliers and the organisation. This increase in information sharing improves conflict resolution.

Therefore, the third hypothesis proposed by this study is:


**Long-term relationships with key suppliers**

Market uncertainty has been increasing over the last several decades due to threats of resource depletion and raw materials scarcity, political turbulence and government intervention in supply markets, intensified competition and accelerated technological change (Kraljic, 1983).


Transaction cost theory predicts that as environmental uncertainty and speed of transactions between companies increase, vertical integration is preferred in order to reduce transaction costs (Williamson, 1989). These costs include cost associated with negotiating, implementing, coordinating, monitoring, adjusting, enforcing and terminating exchange agreements. Yet, high levels of vertical integration are risky for companies in industries with excess capacity, rapidly changing technology, or fluctuating demand, where integration limits companies' abilities to respond quickly to industry changes (Pint and Baldwin 1997).


Consequently, developing long-term relationships has become an alternative to vertical integration in responding to uncertainty and transaction-specific assets

(Williamson, 1989), while preserving some market incentives to reduce cost and enhance performance (Pint and Baldwin, 1997).

Rapid technological changes are decreasing the useful life of products and technologies leading to adoption of lean production techniques and advances in computer power and communications systems thus increasing the importance of collaborative relationships (Harrigan 1983;1985) (Pint and Baldwin, 1997). Several companies have capitalised on long-term partnerships to handle the challenges in their uncertain environments, identify cost efficiencies, improve customer service, create marketing advantage, and ensure profit stability and growth (Lambert *et al*., 1998).

Long-term partnerships represent an investment by the buying company in the supplier that reduces transaction costs and yield a more cooperative relationship. Relationship continuity is enabled through intensive and regular sharing of cost and technical information, and extensive face-to-face communication between buyer and supplier (Pint and Baldwin, 1997).

Research of supplier selection practices shows that finances, consistency, relationship characteristics, flexibility, technological capability, customer service, reliability and price are critical decision dimensions in this process (Choi and Hartley, 1996). Selecting suppliers based on product quality, delivery reliability and product performance have a significant positive effect on supplier performance, company performance and customer satisfaction (Monzcka *et al.,* 1998) (Vonderembse and Tracey, 1999) (Krause *et al.,* 2000) (Tracey and Tan, 2000).

The criteria for assessing the success of partnerships include both soft (competitive technology, supply chain integration) and hard (cost, quality and cycle time) measures (Monzcka *et al.*, 1998). Long-term relationships speed up the development process, bring new products to market faster and minimise the investment in resources while reducing specific costs and response time (Monzcka *et al.*, 1998) (Pagel, 1999).

Strategic sourcing is so critical and can have a strong effect on the bottom line, thus some buyers prefer managing and developing incumbent suppliers by aligning strategies and working towards common goals for the procurement of direct materials only. Other companies utilise their highly skilled procurement staff to manage and source other purchases including indirect materials,services,utilies and capital equipment. As executives acknowledge the strategic role of procurement, the skills employed by procurement professionals should be broadened. Negotiation and management skills are increasingly important as the procurement role evolves from transaction-based into more of a strategic partnership with suppliers (UPS Supply Chain Solutions, 2005).

When executed correctly, Strategic Sourcing enables the company to constantly evaluate information about the business' strategy, overall market conditions, suppliers' performances, internal needs and expectations, and upcoming engineering changes and to adjust accordingly. "Sourcing" is not "Strategic Sourcing". From an approach perspective, what separates the two is the ability to address the following critical success factors while executing against the approach.

These factors are shown in the order an organisation would encounter them in the process and are not indicative of the order of priority (UPS Supply Chain Solutions, 2005).

### 3.5.4  Strategic Sourcing approach to Critical/Key Success factors

● Information Availability

● Organisational Commitment

● Supply Market Understanding

● Total Cost Evaluation

● Modifying Approach towards Suppliers

● Organisational Role Changes

● Culture / Processes for Continuous Improvement

**Information Availability**

When a sourcing professional is the "First-to-know" rather than the "Last-to-know," the sourcing function becomes proactive, instead of reactive, which significantly improves results. Consider the possible differences in costs, availability, and selection when a professional has six months to outsource a printed circuit board assembly versus three months or less because manufacturing failed to communicate the capacity issues which require changes to procurement. Consider the possible benefits when a sourcing professional has the opportunity to recognize there will be a shortage of a particular product in six months and can proactively source alternate suppliers.

**Organisational Commitment**

Executive commitment to Strategic Sourcing is imperative. First, executives are the source of the information (business strategy objectives/operational improvement goals) and they must ensure the information is filtered to the procurement organisation. Second, the level of integration between an organisation and its suppliers and the investment needed to achieve competitive advantages can be substantial and require executive commitment from all the organisations involved. Third, resources (human and financial) will have to be allocated to achieve sourcing results. Fourth, and most importantly, organisational commitment is required to address the changes, management issues. For example, compliance to sourcing decisions often needs executive support and communications in order to drive adoption throughout the organisation. An organisational commitment is required to implement and support Strategic Sourcing.

**Organisational Role Changes**

One of the keys will be to separate the sourcing function from the procurement function. Individuals responsible for sourcing typically spend over 50-60 percent of their days addressing transactional responsibilities (placing orders, rescheduling orders, resolving shortages, resolving invoice discrepancies) and have little time available to focus on higher value activities. Examples of higher value activities include supplier management, market research, and meeting with internal customers to understand how their needs are currently being met and/or are potentially changing.  In addition, since information is required from internal customers - for example: engineering, manufacturing, sales and marketing - potentially these individuals will be required to provide part-time support resulting in a roll change to

the Strategic Sourcing process and develop an understanding of the overall business goals.

### 3.5.5  Culture/Process for Continuous Improvement

Change management is instrumental to delivering the results and more importantly sustaining the results. Change is hard. UPS Supply Chain Solutions consulting services describes this as converting from a "Project to a process". In addition to the critical success factors mentioned above, organisational commitment, organisational role changes, and measurements (both internal and external) need to be addressed to drive the corresponding behavioural changes. When looking at the macro or top-level view of the approach to Strategic Sourcing, it is difficult to assess what is different from the traditional sourcing approach. However, when looking at the definition of Strategic Sourcing and then evaluating what needs to be addressed from a critical success factor perspective and why, the differences should become apparent. The critical success factors previously discussed will vary slightly depending on an organisation's current situation. They are not meant to be all inclusive nor imply that if addressed, success is guaranteed.  However, they do represent a solid checklist for determining how likely an  organisation will be in achieving and adapting to the objectives of Strategic Sourcing (UPS Supply Chain Solutions, 2005).

"Visionary leadership in strategic sourcing" contributes to strategic sourcing. This indicates that strategic sourcing requires top management to set and communicate clear sourcing objectives and performance expectations to all levels of related employees. By encouraging cultural change to motivate and reward employees in

the organisation, it facilitates the collaboration across intra-organisational boundary, thus it can help to improve the sourcing performance.

It is necessary for top management to include sourcing as part of corporate strategy, provide adequate resources to support sourcing function and encourage development of long-term buyer and supplier relationship. On the other hand, it is critical to utilise departmental expertise to form cross-functional teams to conduct competitive analysis.

By interpreting the analyzing information, action plans are developed with a view to enhancing the strengths and weaknesses in sourcing function. Focus on life cycle cost is one of the important sourcing principles that lead to sourcing performance. The sourcing knowledge and skill of sourcing personnel is crucial to apply sourcing strategies to meet different requirements on products to be delivered (Chan; Chin & Lam, 2007).

Secondly, "Supplier management systems" also contributes to strategic sourcing. This implies that management of supplier is crucial. Suppliers who pass the evaluation on multiple selection criteria are qualified. Through matching product requirements with relevant criteria, the supplier with highest score is selected. It is essential to monitor supplier performance by performance assessment program. Based on the assessment results, suppliers can take correction actions for improvement. Moreover, the poorly performing suppliers can be pruned from the supply base. On the contrary, the good suppliers with reliable performance are certified and the partnership strategy can be applied. Similarly, the suppliers with average performance can be further developed by transferring best practices among suppliers through education and training. As a result, companies can gain

competitive advantage through improving suppliers' capabilities. Collaboration with suppliers by providing more information, enabling early supplier involvement in new product development, can improve the development lead-lead and cost; thus can improve the sourcing performance (Chan *et al.,* 2007).

Thirdly, "Continuous improvement" also contributes to strategic sourcing. This suggests that continuous improvement in strategic sourcing is also important. The management should set the continuous improvement tasks in sourcing, allocate resources, provide an organisation-wide culture, offer training to employees, motivates employees by reward and recognition to facilitate continuous improvement in sourcing. Systematic approaches should be adopted to solve problems and improve the sourcing system. Continuous improvement tools and techniques should be applied to improve sourcing performance by eliminating the problem sources. Companies should develop a learning organisation through reinforcing the sharing of tacit knowledge through interpersonal communications, transferring existing and new knowledge within the company, and integrating knowledge into process, products or services through lessons learned from previous failure cases (Chan *et al.,*2007)

### 3.5.6  Turning a Blind Eye to Relationships: Long-Term Expectations, Short-Term Reality

The desired outcome of strategic sourcing is to improve the buyer's competitive priorities (cost, quality, and delivery), and much of this is accomplished by creating an environment where the supplier trusts the buyer. According to the tenets of strategic sourcing, this trust is based on the expectation that relationships with a smaller number of suppliers would be more intimate, improving information sharing, understanding, and communication. Once buyer-supplier relationships move from

short-term spot exchanges to long-term serial exchanges, suppliers are willing to work with the buyer to improve transactional efficiencies and reduce the time it takes to move a product's market. Therefore, lower costs are based on long-term increased efficiencies, not simply short-term price reduction. When practiced with the sole aim of reducing the short-term purchase price, these initiatives create dissonance between buyers and suppliers. According to discussions with suppliers, strategic sourcing and commodity management have irretrievably damaged buyer-supplier relationships (Rossetti and Choi, 2005).

Savings for strategic sourcing can be 5%-20% or more. Results will vary based on several factors:

- Type of products or services

- Marketplace factors

- Current procurement practices

- Implementation of automated systems

- Execution of a sound sourcing strategy

### 3.5.7 E-procurement and Strategic Sourcing mutually deliver massive savings

E-procurement solutions are revolutionising the procurement practices of companies, large and small, eliminating many paper-based and labour-intensive processes while ensuring transparency and improved control. Yet, E-procurement alone cannot deliver the depth of benefits expected by business investing in the technology: it must be supported by effective and transparent strategic sourcing. E-business has the potential to generate huge new wealth and to transform the way business is conducted in unprecedented ways (Amit and Zott, 2001).

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The use of new technology in procurement seems to promise substantial benefits (Neef, 2001). The questions that arise are how to capture this possibility as wisely as possible, which E-procurement tools are necessary to have and which ones are not. There is a need for some kind of guidance for assessing the new E-procurement tools and under what circumstances to use them (Gattiker ,Huang, & Schwarz,2007), since they are considered to be of extreme interest for the development of the procurement function during the coming decade (Carter,Carter,Monczka,Slaight & Swan, 2000)

However, the procurement function cannot be viewed in isolation in an organisation; it is important that the procurement function operates in conjunction with the corporation, and that the procurement strategies are consistent with corporate competitive strategy (Watts ,Kim, & Hahn, 1995). It is assumed that the procurement function can contribute to the success of the corporation: "By developing a procurement strategy that focuses on the character of its competitive strength, a firm can enhance its market position" (Rajagopal and Bernard, 1993:14). Narasimhan and Carter (1998:169) argue "That procurement practices should fundamentally stem from and be linked to those [organisation] priorities if procurement is to become strategic".

### 3.5.8  Leasing as a form of strategic sourcing.

Leasing is a process where equipment is acquired but financed, paid for and owned by an external organisation. The lessee pays a rental for the use of that equipment

over the agreed period. At the end of the lease period the equipment is returned to the owner, that is, the lease partner.

The Lease Agreement can cover ICT equipment, including the items listed below.

- Desktop computers

- Laptop/notebook computers

- Servers

- Printers

- Network equipment

- Video conferencing equipment

- Scanners

- Photocopiers

However, a wide range of non-ICT equipment can be leased also.

There are significant benefits associated with leasing ICT equipment. These include:

- Spreading costs over the life of the equipment rather than a large initial outlay

- Improved cash flow and budgeting through predictable lease costs

- Lower costs on a time value of money basis (net present value)

- Assists in a disciplined approach to equipment acquisition and disposals

- Facilitates the provision of current technologies for students and staff

- Simplifies deployment of computing technology

- Safeguard against technical obsolescence

- Enhances capital management (funds can be preserved for alternative uses which offer a beneficial payback for the organisation as a whole)

- Rent free periods

All equipment to be leased must meet minimum specifications which have previously been negotiated by the organisation with its preferred suppliers. Leased equipment can be managed through the use of leased equipment management system. All leased equipment must be recorded in the asset management system as soon as possible after it is received. A failure to complete a record of the leased equipment will result in delayed payment to the supplier and to the risk that the equipment will be out of warranty prior to the end of the lease period.

At end of a lease, all leased equipment is returned to the lessor. It is essential that all leased equipment be recorded and tracked using the organisation's leased asset management system so that it can be easily located at the end of the lease period. Thus it is important that the system be updated if the equipment is moved, transferred or responsibility for it changes in any way. Departments which no longer have a need for the equipment being leased can transfer it to a new department/responsibility centre using the asset management system.

### 3.5.9  The E-procurement/Strategic-Sourcing Synergy

How Strategic Sourcing Aids E-procurement?

- Reduces number and complexity of catalogs
- Reduces maintenance cost and complexity of catalog and system
- Focuses development work with preferred suppliers
- Focuses catalog content and features on priorities
- Prioritizes roll-out based on benefits

- Develops strategic capabilities in personnel freed up by E-procurement

- Addresses the necessary business process issues that can make E-procurement difficult to accomplish


How E-procurement Aids Strategic Sourcing?

- Encourages use of supplier agreements by eliminating "maverick" buying

- Allows for increased volume estimates in negotiations by capturing more data on purchases

- Frees up procurement resources to focus on strategic efforts

- Takes advantage of potential cost incentives available from supplier for use of e-business

- Aids in measuring performance


The "One-shot deal" mindset also applies to E-procurement, where viewing "Go-live" as the finish line can blind a company to the ongoing support that the application will require. This support includes continuing supplier-enabling efforts, content management, administrative data maintenance (end-user, supplier profiles, and business rules), rollout of software upgrades, and, last but not least, marketing E-procurement to the organisation (Corini, 2000).

Despite the challenges involved in implementing E-procurement and strategic sourcing, the gains are well worth the effort. Furthermore, those gains can be multiplied when the two initiatives are integrated.  E-procurement, for example, frees

up human resources to focus on more strategic-sourcing activities. Strategic sourcing, for its part, can reduce the number and complexity of E-procurement catalogues.

When it comes to actually implementing an E-procurement solution, companies need to plan for and recognize the challenges they will encounter. These include issues such as supplier resistance and ongoing support costs, issues that can limit the success of any implementation. The same holds true for strategic sourcing. Unless effectively addressed, challenges like end-user compliance and supplier hedging can greatly diminish the benefits that will be realised. And, of course, there are the change-management challenges, which can be as difficult to deal with as any other (Corini, 2000).

When E-procurement and strategic sourcing are viewed in isolation, the implementation challenges can appear daunting. When viewed together, the complementary objectives become evident, and the implementation effort takes on a clearer focus. Thus, while each initiative can be undertaken independently, only by integrating E-procurement with strategic sourcing can organisations realise the full potential of either.

Strategic supply management incorporates both strategic sourcing and E-procurement to continuously drive procurement success. Using E-procurement and strategic sourcing together will:

- Accelerate the time to achievement of savings
- Generate additional value and savings
- Sustain value and savings

Strategic sourcing can achieve 10-15% in benefits by engaging in such key activities as total cost oenwrhip,contract management,corporatewide procurement,syupply base rationalisation and product standradusation. E-procurement achieves 8-10% in savings through a reduction in transaction time/cost,that is,increased contract compliance and reduction of maverick spend;sssttreamlinde sourcing processes and reduces transaction costs;reduced number and complexity of supplier catalogs and focused development with prefferd suppliers. A robust E-procurement solution implemented on top of a best practice strategic sourcing capability can result in savings of 18-25% (Deloittes Consulting Survey,2007).

Corini (2000) outlines the main difficulties companies encounter in implementing both procurement and strategic sourcing and then describes how to deal with those difficulties. The synergistic benefits of integrating E-procurement and strategic sourcing are explained and the steps for successful integration laid out. By combining strategic sourcing with technological capabilities of E-procurement, companies can achieve optimal results.

Therefore, the literature review helped to formulate the following hypothesis:

*H5: Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practices*

## 3.6 Summary

This chapter covered the theoretical literature of E-procurement and strategic sourcing. Empirical perspectives of E-procurement and Strategic Sourcing will be considered in Chapter 4.

# CHAPTER 4: EMPIRICAL LITERATURE REVIEW

In this chapter, a comprehensive empirical literature review will be carried out to guide the development of the most appropriate methodology for this study. Though not exhaustive it gives guidance on key aspects of the study. The review of related literature aims at providing the necessary framework within which the problem is presented, analysed and interpreted.

## 4.1    Introduction

This section presents an overview of basic concepts and previous research in the area of electronic procurement, and it outlines the objectives of the study. The number of academic publications on E-procurement has increased in the past two years. This increase made it possible to review previous results from at least nine different countries and industry sectors namely : Portugal (Palma dos Reis and Soares Aguiar, 2006); Ireland (Nagle *et al.*, 2007); Germany (Crossgate, 2007) (Kutschera and Tittel 2005); Australia (Williams and Hardy 2007); Spain (Ortega; Martinez, & DeHoyos, 2006); United States of America (Hawking and Stein, 2004) (Wyld, 2004) (Ageshin, 2001) (Atkinson, 2000); United Kingdom (Tomorrowfirst, 2000) (Fisher, 2000b) (Fröhlich and  Westbrook,2001); Singapore (Kheng and Al-Hawandeh, 2002); Hong Kong (Yen and Ng, 2003) (Chan; Chin & Lam, 2007);Taiwan (Yen and Ng, 2003); Korea (Seong and Lee,2004); and Africa: textile, manufacturing, banking and public sectors.

Empirical studies on E-procurement have begun to emerge.  Among the few studies conducted to date, Min and Galle (1999) investigate the determinants of e-commerce

usage for procuring activities from the perspective of the buyer. They argue that adoption of e-commerce for procurement is greater for larger companies and for companies with a higher level of familiarity with e-commerce. In addition, they conclude that larger companies tend to put more emphasis on supplier's commitment to e-commerce trading for their supplier selection.

Empirical research has shown that the status of the Procurement function among other functions is highly correlated with the level of strategic procurement, and the company's financial performance (Carr and Smeltzer, 1997). By participating proactively in strategic processes of the company, Procurement can capitalise on its unique and important position at the inbound side of the company.

Porter (2001) cautions managers who do not use well-known, accepted techniques in determining Internet strategy. He argues that for companies with a viable strategy, there are substantial opportunities in creating competitive advantage. He also differentiates between the Internet technologies and the uses of the technologies, arguing that the latter creates economic value. He also argues that Internet makes operational effectiveness more available to companies; therefore the main driver behind competitive advantage is strategic positioning. In addition he cautions against ripple effect of the Internet, using the Internet for one activity places greater demands on the rest of the value chain.

Internet based companies gain significantly positive returns while traditional, bricks-and-mortar companies do not. The problem faced by brick-and-mortar companies is due to the conflict that is created between existing relationships that a company has

and the new relationships that are built through e-commerce (Subramani and Walden, 2000). Currently e-commerce is more frequently used for procuring maintenance, repair and operating (MRO) supply (Croom, 2000).

Many E-procurement ideas such as dynamic markets and auction theory have been long studied areas within economics (, for example, auctions (Milgrom and Weber 1992) (Riley and Samuelson, 1981). Recent work has begun to explore how online exchanges impact the procurement process and the supply chains of individual companies. For example, Kaplan and Sawhney (2000) and Wise and Morrison (2000) both developed frameworks to understand what types of exchanges would appear for different types of products and examined how exchanges may evolve. Jap and Mohr (2002) explored why some organisations are successful with E-procurement strategies while others are not. Lee and Whang (2000a) modeled how secondary online markets impacted the supply chain. Pyke and Johnson (2002) compared many E-procurement strategies to traditional strategic alliances.

Lee and Clark (1997) invoked transaction cost economics in pointing out a number of risks associated with setting up electronic market mechanisms such as opportunism by unscrupulous market participants and asset specificity. The latter has to do with the need for a firm to commit certain resources to deploy IT applications and infrastructures needed to link its internal business processes with those of the e-marketplace trading platform. The more complex and idiosyncratic these integration links are, the more difficult it is to transfer use of such connections with other trading platforms or trading partner network.

According to Kasturi (2000), E-procurement could also result in negative cost impact incurred by manufacturers such as carrying excess inventory, poor transaction turnaround times, and uncertainties in supplier inventory and production schedules. On the other hand, depending on the characteristics of product or service, E-procurement might not be suitable for some high-specification goods or services where tight relationships between buyers and suppliers are essentially required (Fisher, 2000a).

Knudsen (2003) presents a framework for assessing alignment between corporate strategy, procurement strategy and purchasing tools. The framework is built on generation of rent as its common denominator for assessing alignment levels. Three types of rent are identified (ricardian, entrepreneurial, and monopoly) and are used for assessing the strategic origin of the following E-procurement applications: e-sourcing, e-tendering, e-informing, e-reversed auctions and e-collaboration.

A recent survey indicated that E-procurement of direct goods is now exceeding that of indirect goods (Bartels; Hudson & Pohlmann, 2003). On the other hand results are also less than expected by some. Such confusion may be causing some type of inertia within the adoption process even though significant benefits can be obtained (Anon, 2001;Anon 2005).

## 4.2 Europe

In a recent survey, Palma dos Reis and Soares Aguiar (2006) studied the factors leading to the adoption of electronic procurement systems in Portugal. Their respondents were people in management positions from 240 large companies in

manufacturing, commerce and services. The authors built their hypotheses on the framework of Tornatzky and Fleischer (1990), which describes three aspects of a firm's context that can influence the adoption of technological innovations: organisational context; technological context; and environmental context. The authors found positive relationships among firm size (organisational context), technological capabilities (technological context), the extent of adoption among competitors, and trading partner readiness (environmental context).

In a field study in Ireland, Nagle *et al.* (2007) explored the effects that B2B relationships have on E-procurement systems. The authors performed an in-depth field study in six selected companies and successfully showed that adversarial type relationships influence E-procurement systems around the sourcing phases (information gathering, supplier contact, background review and negotiation). They demonstrated that in comparison, collaborative relationships tend to affect the fulfillment and consumption phases more than other procurement activities.

Due to the significant investments required for building up an EDI system (converter, contacts, VAN setup), many old-fashioned EDI software interfaces are still in use and have not been replaced with XML-based technology. A recent EDI survey performed in Germany (Crossgate, 2007) addressed 5,000 companies from different industries. Of the 891 respondents 50% reported that EDI still has a high priority in their procurement processes. This is also reflected in the fact that the order is the number one business document exchanged electronically by 76% of the responding companies.

A survey on E-procurement in Australia (Williams and Hardy, 2007) showed that E-procurement has become an increasingly strategic topic in companies in different industries across the public and private sector. Compared to a similar survey conducted two years before, E-procurement implementations had increased in both reach and scope. More companies were investing in the electronic support of procurement functions and processes. However, none of the respondents who had implemented E-procurement reported major or significant benefits. This is in line with findings from Germany (Crossgate, 2007) (Kutschera and Tittel, 2005) and results from Switzerland (Tanner,Wolfle,Schubert & Quade , 2007).

Perhaps the best tracking source on the growth of the E-procurement in the United States comes from the Institute for Supply Management (ISM; formerly the National Association of Procurement Managers - NAPM). Along with Forrester Research, ISM began a quarterly *Report on e-Business* in January 2001. To date, eleven reports have been conducted (through the third quarter of 2003). This series of reports lend perhaps the most credible insights into the current status of e-commerce in the B2B realm in the United States. Each quarter, ISM and Forrester survey approximately 600-700 procurement and supply management executives of both manufacturing and service industry organisations. The surveyed organisations, which are randomly selected each quarter, represent a broad cross-section of American business, as they are diversified according to geography, size, and industry (based on SIC – Standard Industrial Classification – codes). The *Reports on e-Business* present findings on the penetration of web-based procurement methods in the United States on how to:

- Bring down the total cost of procurement

- Communicate and collaborate with the supplier base

- Purchase both direct and indirect materials

- Use Internet-based marketplaces and hubs

- Use enterprise-wide E-procurement tools (Hawking and Stein, 2004)

A study by Wyld (2004) reported that currently almost half of all American companies use E-procurement systems. Although the adoption of E-procurement has rapidly increased in recent years, companies face different challenges associated with the advent and use of E-procurement. One is that most companies only apply single E-procurement functions. The analysis by Wyld (2004) shows that in the USA only 30 percent of the companies surveyed use E-procurement systems for requests for quotations, online auctions (25 percent) or e-markets (33 percent). A second challenge is that, despite the overwhelming evidence which shows the advantages of E-procurement systems, proprietary systems such as EDI continue to persist, and have to be included in a company's overall E-procurement infrastructure. To do so, companies need to know the critical success factors in implementing E-procurement strategies, processes and systems.

Forrester Research, a consulting firm, predicted that E-procurement will grow 99% annually ,meaning the volume of transactions could account for 9.4% of the United States of America. Goldman Sachs, an investment bank, forecasted that E-procurement transactions will reach US$1.5trillion by 2004 (Ageshin , 2001).

Large companies such as General Electric and Wal-Mart created buying and selling hubs in the Internet designated to cut costs and speed supply procurement. Major

players of some vertical industries, such as General Motors, Ford and DaimlerChrysler are joining in E-procurement consortiums (Ageshin, 2001).

The introduction of an E-procurement system in Texas Instruments reduced the number of transactions in which procurement was involved and replaced the internally based catalog system, while saving a significant amount of cost. The Texas-based Burlington Northern Santa Fe Railway, Fort Worth (BNSF) planned to apply E-procurement for strategic sourcing and SCM as they believed that collaboration with their suppliers could be facilitated in order to achieve full contract discount pricing. The printing company, Lexmark, also took advantage of the strengths of E-procurement to enhance the relationship with both their customers and suppliers in order to deliver materials in their supply chain (Atkinson, 2000).

A further survey of fifty of the leading United Kingdom companies identified the principal benefits of E-procurement to include - better resource usage, adding value through leveraging, and eliminating maverick buying (Tomorrowfirst, 2000). The majority of the respondent companies in the Tomorrowfirst report (76%) believed that the implementation of an E-procurement solution was *critical* to the success of their business in the future.

Shell Services International launched its E-procurement service as a cost-cutting driver in July 2000. Its e-catalogues contain a broad list of suppliers ranging from huge contract partners to small chemical producers with which Shell has pre-negotiated discounts and service contracts. When a procurement order is received, it is automatically forwarded to the appropriate suppliers (Fisher, 2000b).

Fröhlich and Westbrook (2002) surveyed a sample of UK-based organisations in order to investigate the extent to which they used Internet-based technologies to integrate supply chain activities such as inventory planning, order taking, and demand forecasting. The authors categorized the respondents' usage into four groups, namely:

- Web-based, low integration (Internet-enabled focus on the firm only)

- Web-based supply integration (Internet-enabled integration between the firm and its suppliers)

- Web-based demand integration (Internet-enabled integration between the firm and its customers)

- Web-based demand chain (Internet-enabled integration between the firm, its suppliers, and its customers)

Fröhlich and Westbrook (2002) found that the majority of organisations (63%) engaged in web-based, low integration. The web-based demand chain group was the smallest segment, with only 4% of the respondents in this category.  Data from a large-scale survey show that the barriers to effective e-coordination have come from suppliers, customers and the organisation itself and of these, organisation-related shortcomings are the most influential (Frohlich, 2002).

The results of a multi-sample survey of Spanish organisations operating in various sectors, which was conducted by Ortega *et al.* (2006), provided support for the premise that the sector in which a firm operates plays a role in the acceptance of technologies. Ortega *et al.* (2006) found there were factors that influenced

technology adoption such as perceived ease of use and usefulness of the technology, but their effect was contingent upon the sector in which the firm operated.

## 4.3    Asia

Kheng and Al-Hawandeh (2002) investigated the adoption of E-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean organisations. Firstly, there was concern about security and privacy of procurement transaction data. Secondly, it required a significant investment in hardware, software, and personnel training to participate in E-procurement which is prohibitive. Thirdly, the laws governing B2B commerce, crossing over to E-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic procurement show only about half of those specific respondents had any formal spending analysis tool in place. And the few that had these tools analyzed only half of their total spending.  Fourthly, technical difficulties related to information and data exchange and conversion such as inefficiencies in locating information over the internet using search engines and the lack of common standards get in the way of the easy integration of electronic catalogs from multiple suppliers.

In Zhu's (2002) interview of 20 suppliers, he found that their major concerns centered on how participating in electronic E-procurement environments threatened their profit-making abilities through data exposure, pricing pressure from customers, and the resulting margin erosion.

In Taiwan, IT has been adopted to enhance the global competitiveness of various industries through the widespread application of cost-effective EC. Many Internet-based systems have been designed and developed for various industrial applications and they mainly center on information communication infrastructure, coordination in production and distribution, and procurement functions with security mechanisms. A model of an impact study of EC on procurement in SCM accompanied by a four-phase migration model and an impact categorization table is proposed. An example of EC procurement (HKTAIGA- Hong Kong Textile Apparel Industry Global Application) within the textile industry is also presented to demonstrate impact on buyers, sellers, and procurement processes. Nevertheless the procurement migration process is determined by the size of company and nature of the industry, and the requirements involved may vary as well. Although this study cannot totally reflect the EC deployment feasibility, this article provides guidelines to conduct an impact analysis in the procurement process (Yen and Ng, 2003).

Korea launched national E-procurement systems in September 30, 2002. The adoption of the E-procurement systems in the central government of Korea has been acknowledged as successful. Seong and Lee (2004) present a case study describing the public E-procurement systems of Korea, analyzing the development process, and finding factors for successful adoption of the systems. Government E-procurement Systems (GePS) is a portal site providing information on public procurement and an application service provider of public procurement. GePS advances procurement service by reducing paper work and red tape, expanding the range of commodity selection, and standardizing services. Government-wide support including the President had a crucial role for the adoption of GePS. High capacity of

information technology and institutional collaboration among public agencies were other foundations for the successful establishment of GePS. The impact of E-procurement systems includes economic efficiency as well as improved procurement capacity of the government. Especially in developing countries and mid-income countries like Korea, the electronic transaction will reduce the possibility of corruption that usually occurs with face-to-face transactions. It is not easy to comprehend and measure the performance and benefits of E-procurement (Seong and Lee, 2004).

The results of empirical findings of the Hong Kong toy industry indicate that sourcing performance is positively related to the implementation of 14 key success strategic sourcing factors. It provides insight for Hong Kong toy companies to improve their sourcing performance by focusing on all these 14 key factors. Due to limited resources, it is not feasible to implement all 14 factors at once (Chan, *et al*,2007)

## 4.4  Africa

In spite of the claimed business benefits that can come from embracing E-procurement, the extent of adoption in Organisation for Economic Co-operation and Development (OECD) countries is below expectations and progressing slowly (Pires and Stanton, 2005). Despite significant recent increases in internet sales in many countries, total business-to-customer plus B2B internet commerce is still low (Walker and Harland, 2008).

The global digital divide has been defined as the differential extent to which rich and poor countries benefit from various forms of information technology (James, 2007). Business use of the internet has become fairly standard in OECD countries: in 25

countries more than 89 per cent of businesses with ten or more employees have access to the internet and over half have their own web site (OECD, 2007). The growing perception that the internet is becoming an engine for global economic and social change has inspired both governments and inter-governmental agencies to accelerate the diffusion of the internet around the globe via multimillion dollar programmes and initiatives. (Crenshaw and Robison, 2006).

While in some poor regions the number of internet users has grown substantially, overall the gap between developed and developing countries remains wide (UNCTAD, 2005). For example, while 89 per cent of enterprises in EU nations are connected to the internet, the same is true of only 9 per cent of organisations in Thailand. The UN Conference on Trade and Development produced a report in 2004 on e-Commerce Development that showed that internet access is high among enterprises in developing countries, but that the adoption of e-business is low, especially amongst SMEs (I-Ways, 2005). Of those developing country SMEs using the internet, the main barriers to e-business are perceived to be lack of network security, development costs, lack of client supplier readiness and slow and unstable connections.

A digital divide exists between those with internet access and capability and those without; this divide may be between organisations, such as small businesses and large organisations, within nations, for example between urban and rural communities, or between nations, such as developed and developing nations. The level of the divide is most extreme between highly technologically developed nations, such as the USA, and less-developed nations, such as many of the African nations.

Developing countries in Africa and other regions face a competitive disadvantage because their businesses have difficulty accessing the internet (Finance & Development, 2005).

Certain factors seem to affect internet usage and e-business uptake amongst developing countries. Developing countries whose policies promote economic growth and private sector competition have experienced higher internet intensities (Dasgupta, Lall & Wheeler, 2005). A country's degree of development impacts on internet usage, and degree of development can be viewed in terms of a country's status in the world, level of democracy, foreign investment, manufacturing exports, and trade share (Crenshaw and Robison, 2006) (Santora, 2006). Factors impacting on the diffusion of e-commerce in developing countries include infrastructure in areas such as IT and telecommunications, commercial, government and legal, social and cultural factors, transportation and minimum disposable income (Javalgi and Ramsey, 2001) (Murillo, 2001). Trade using e-commerce is a means of improving the economic growth and performance of less-developed nations (Lund and McGuire, 2005).

According to Cater (2001), a growing range of companies in the developing world are making the Internet a key part of their sales and marketing. The new aid, E-procurement, is encouraging companies to find more customers, offer products and services for export and increase efficiency to compete in global markets.

Currently there are no major developments in E-procurement implementation in Southern Africa, in particular Zimbabwe, across all industry sectors.

## 4.5 Banking Industry

E-procurement is an idea that has gained its profile in the dot.com world and is a notion beginning to get attention from traditional companies, including banks.  Bank of America, Citibank, Deutsche Bank, and First Union are some of the banks beginning to offer E-procurement solutions to suppliers, through service providers such as Ariba (Bielski, 2001).

Development Banks are making available online the details of loan programmes for government spending.  E-procurement is crucial for developing country companies, especially in Africa, according to Dr. Neale du Plooy, Managing Director of South Africa's Tactical \medical Developments (Cater, 2001).

Service companies such as banks, that are willing and able to rethink their business model, at a minimum taking into account how information technology alters the business environment, will get to the future first. They will be measured by the amount of new wealth created and how they use innovation to restructure the industry (Yoffie and Cusumano, 1999b). Eika and Reistadbakk (1998) state that information technology will reduce the cost of producing financial services, facilitate the efficient flow of information, create new distribution channels, make physical distance between banks and customers unimportant, weaken the position of established institutions and make processes in  banking more international.

## 4.6  Textile Industry

According to Ordanini and Rubera (2008), in empirical tests carried out on a sample of 93 organisations in the Italian textile and clothing industry, contrary to expectations, the internet has been found to enhance the effect of process integration capability, but not that of process efficiency capability.  In addition they found that internet not only reacts with each of these capabilities in procurement separately, but it also enhances the synergistic effect between them. They also posit that contrary to common expectations, employing the internet in procurement has little power to reduce transaction costs, although it can be fruitful for improving inter-functional coordination.  The internet can help in "putting the pieces together" by exploiting the otherwise latent complementary effects between procurement capabilities.  Their paper also employs a strategic management theory, the resource based view, to unpack the mechanisms through which procurement activities contribute to performance.

Rhodes and Carter (1998) discussed the impact of EC on changing the product distribution in the textile apparel sector in the following aspects: globalization of production and retailing, evolution in retailing, evolving patterns of competition, pressures on small and medium-sized enterprises (SMEs), customization, and production of "Batch of one".

## 4.7  Manufacturing Industry

Brousseau (1990) reviewed 26 inter-company networks, finding that most were used to reduce production or distribution costs and served to reinforce already existing hierarchical relationships among companies.  Only in two, the petroleum business

and textiles, was the use of inter-organisational networks associated with buyers gaining advantage by having more suppliers from which to choose from.

Cagliano *et al.* (2003;2005) conducted a study on a sample of European manufacturing organisations and identified four clusters of respondents based on their use of Internet-based technologies. The authors categorized the organisations in the following manner: *traditionalists* (55% of the sample) did not use Internet-based technologies within the supply chain, *e-sellers* (23% of the sample) used Internet based technologies for sales and customer care only, *e-purchasers* (14% of the sample) employed Internet-based technologies extensively, but only for the purpose of making purchases from suppliers. Finally, *e-integrators* (7% of the sample) used Internet based technologies in every aspect of their supply chain processes. This included use in internal operations, procurement, and sales. Previous research has established that E-procurement tools can be classified on the basis of a number of characteristics, including an ability to facilitate integration.

IBM and Micron achieved benefits by migrating their procurement onto the Internet. IBM could reduce its total procurement cost and time by $240 million in 1999. Micron gained a reduction in paper cost, and inventory with its purchase order (PO) process, and moreover, its whole procurement was sped up (Carbone, 1999).

Croom (2000) carried out a Delphi study to explore the impact of Web-based procurement systems on MRO procurement and classified them as "Operational" and "Strategic" benefits. The operational benefits include the ability to reduce overall procurement costs and the improved audit of each transaction within the process.

The strategic benefits refer to greater influence and control over procurement expenditure.

On the other hand, Philips (1999) and Hill (1999) investigated the impact of information technology (IT) on the supply chain of computer and apparel manufacturer's respectively. Philips (1999) proposed that by shortening the supply chain (SSC), a "Favorable impact" can be achieved such as: the reduction in procurement time using EDI; better planning by collaborating effectively with suppliers and customers; an increase in the flexibility of response to change; a reduction in both time and cost by delivering goods directly from suppliers to customers; and enhanced communications with customers by electronic media. Similarly, Hill (1999) recognized the impact as transport to change in the respects of information exchange in order to provide better decisions, better relationship between manufacturers and suppliers, better collaboration between retailers and manufacturers, and exchanging information in a paperless environment.

Atlas Services, a subsidiary of VEBA Electronics, conducted a detailed process study of its quotations group in March 1999 to quantify the benefits of the TRADEC.com E-procurement system it had implemented. To quantify the benefit of the E-procurement system, a business approach was used, by mapping the original business process and critical data points were identified. Among benefits identified, these include increased accuracy and higher job satisfaction among quote analysts, by concentrating on building relationships, providing customer service and thinking strategically (Weil,2000a;2000b)

## 4.8   Public sector

Electronic procurement in the public domain can be seen as a policy tool to support the delivery of public procurement policy, improving transparency and efficiency (Carayannis and Popescu, 2005; Croom and Brandon-Jones, 2005). E-procurement can assist a government in the way it does business by reducing transaction cost, making better decisions and getting more value (Panayiotou,Gayialis & Tatsiopoulos, 2004). E-procurement adoption and usage in the EU and US public sector is being encouraged (Carayannis and Popescu, 2005) (Reddick, 2004).

Forrester Research reported on best practices on E-procurement and found that organisations and government offices adopting such practices do, in fact, centralise corporate-wide procurement policies, standards, technologies, and the actual execution of sourcing to the relevant departments and employees (Bartels, 2004a,2000b).  Large customer organisations appear to be in a better position to centralise its procurement resources; they have larger annual procurement volumes, and thus stand to gain more financially from price discounts they could extract from major suppliers (Min and Galle, 2001) (Riggins and Mukhopadhyay, 1994).  On account of their power, larger customer organisations appear to be able to keep a tighter rein on their supplier network when it comes to implementing IT infrastructure requirements (Min and Galle, 2001). Otherwise, it is  still a major challenge to get suppliers to participate fully in E-procurement initiatives and ensuring that they adopt the appropriate technologies to make these initiatives work (Bartels, 2004a, 2000b).

Empirical research has been carried out on the procurement practices of New York State school districts.  Results reveal that despite the potential for new technologies,

competitive bidding laws and enrolment size dictate the procurement methods used most frequently by school districts as many require investment of resources before transaction cost savings can be realised (Duncombe and Searcy, 2007).

According to Dooley and Purchase (2006), research indicates that E-procurement is being implemented slowly in many organisations, especially government organisations. Their research investigates positive factors influencing E-procurement intentions within semi-government organisations.  A web-based survey was carried out on Australian government purchasing professional's perspectives on E-procurement.  Their findings from a multiple regression analysis indicate that suppliers' participation ,internal managerial support and the perceived benefits gained through implementation all influence E-procurement intentions.  In particular, the research focused on Australian State Government Departments that have become autonomous financial entities.  Examples include railway infrastructure and transport, electricity supply; building services; airport corporations and specialised health care providers (Dooley and Purchase, 2006).

Governments have also recognised the potential benefits of an E-procurement solution. In Australia, both the federal and state governments have established web sites to facilitate the uptake of E-procurement (PRC, 2001; ) (NSW, 2001). These sites include strategy documents, resources, research, links and tools related to E-procurement.

Research into government organisations has highlighted a number of factors that may influence this approach: inflexibility of organisational structures; lack of financial

investment; lack of skills and training; and not suited to traditional government practices (MacManus, 2002).

Another example of advanced E-procurement is the Pan-European Public Procurement On-Line (PEPPOL) initiative, a major E-procurement undertaking currently managed by a consortium of 14 participants and several subcontractors from nine European Union nations. This collaborative program has built an integrated electronic platform to facilitate easy, reliable, and secure channels for Pan-European exchange of business documents for selling and buying goods and services among private companies and public sector institutions (Tavi, 2008).

## 4.9   Other

Although the implementation of E-procurement initiatives is not all that new, there is current interest in understanding issues involved in its implementation, especially in a web enabled environment. Overall, it appears that E-procurement is still in its early stages of adoption in the corporate world.

A recent Aberdeen Group (2001) study of spending analysis practices of 157 organisations revealed that only a few organisations truly know and understand how much they spend, on which products, and with which suppliers (Bushell, 2004). About 80 percent of the study participants recognized that spending analysis is "very important" or "critical" to their success; yet, only approximately half of those specific respondents had any formal spending analysis tool in place. And the few that had these tools analyzed only half of their total spending. A recent McKinsey Company research study found that the majority of the respondents considered spending

analysis and demand management (that is, questioning the necessity of purchases) as the two areas that were resistant to improvement in their organisations (Kanakamedala *et al.*, 2003).

E-procurement has grown astronomically in recent years. The Gartner Group estimated that online procurement in the business-to-business(B2B) market would jump from US$75billion in 2000 to US$3.17 trillion 2004). One reason was given as E-procurement offers such a strong return on investment. Recent studies by Deloittes Consulting show more than 200 survey respondents will average a 300% return on investment over the first two to three years. Len Prokopets, Senior Manager at Deloitte Consulting says "E-procurement will fundamentally change the dynamics between companies and their suppliers. The traditional purchasing department will cease to exist. Its focus, instead, will be on understanding the requirements of the business and therefore being able to drive the business forward, coordinating information exchanges and improving relationships with suppliers by managing them more efficiently and developing negotiation and sourcing strategies" (Roche, 2001).

Research conducted by TBC Research Limited reveals that 30% of companies taking steps towards E-procurement have fully integrated systems, whereas 26% are not fully integrated. If the systems are not tied together, E-procurement becomes an isolated step (Roche, 2001).

Presutti (2003) refers to a Deloittes Consulting Survey of 200 multi-national companies, which suggests the use of E-procurement is growing. Approximately 30

percent of the companies in the sample had at least a basic E-procurement system in place. A total of 61perecent of the sample had planned to implement E-procurement systems or were at least considering it. While many companies adopt E-procurement in an attempt to reap its benefits, it should be noted that the use of E-procurement does not always guarantee positive outcomes for buyers or suppliers.

Advanced E-procurement strategies are delivering benefits to companies around the globe. Within the private sector companies such as Norvatis and Ernst & Young are thought leaders in their approach to understanding big-picture issues and practices in E-procurement. They focus on the value a supplier provides (reliability and quality) rather than just price alone. They are also taking a holistic approach to financial operations, tying purchasing in with payment and other operations and ensuring they are aligned with business goals and values (Tavi, 2008).

A Recent McKinsey Company research into auto suppliers reveals that 85 percent of the study participants intended to invest at their current or higher levels in new software to automate procurement processes (Hensley,Irani & Satpathy 2003). An earlier industry study indicated that only 8-10 percent of the largest 5,000 organisations had an E-procurement system in place (Attaran and Attaran, 2002). Recent research studies, though, show indicative trends on how the leading-edge organisations are proceeding with their E-procurement initiatives.

The study by Davila *et al.* (2003) demonstrates that there are two types of E-procurement adopters: one group of organisations experiments with multiple solutions, whereas the second group commits only to one type of technology. The

study also indicates that "Follower" organisation value the lessons they learn from their more venturesome counterparts who innovate with newer E-procurement technologies. The findings also show encouraging signs of wider adoption of E-procurement as more organisations come forward with their pioneering implementation experiences and as more and more organisations take internet-enabled supply chain management initiatives more seriously.

Meanwhile, in a field study of an industrial supplier and its customer, Mukhopadhyay and Kekre (2002) found that a supplier could derive strategic benefits when the hub customer firm initiates the E-procurement system and the supplier trading partner, in turn, enhances the system's capabilities. It was also found that supplier trading partners with advanced technological capabilities can significantly increase the benefits of an order processing system both to themselves and their customers.

Other recent studies are also emphasizing the importance of organisational redesign, the organisation of business units, the "Extended enterprise" attributes (Subramaniam & Shaw, 2002), and the rethinking the E-procurement business processes which are really key to the success of the initiative (Hayward, 2001).

Day,Fein & Ruppersberger (2003) noted users' reluctance to be subjected to significant changes in business processes as a major barrier to the implementation of E-procurement systems. Saeed and Leith (2003) examined buyers' perceptions of E-procurement risks and arrived at three dimensions: transaction risks resulting from wrong products purchased due to incomplete or misleading information; security risks resulting from unauthorized penetration of trading platforms and failure to

protect transaction related data while being transmitted or stored; and privacy risks arising from inappropriate information collection and information transparency.

Yen and Ng (2002) found that both buyer and seller organisations in their sample considered the following prohibitive and discouraging: the costs and development time required to set up online procurement systems; enabling these systems; and meeting workforce requirements of such systems; the lack of adequate security measures to protect data; and trust issues between buyers and sellers. In the same study, managers of the seller organisations also cited attitudinal resistance to change stemming from a number of concerns: the uncertainty over its ability to gain the expected return on investment to cover development costs; the work required to enforce business process changes called for by these systems; and worker apprehensions about being replaced by automated procurement systems.

According to a study carried out by the Gartner Group in the USA, the administrative costs for each purchase order along an off-line system range from $100 to $250, while with E-procurement support they lower to about $30, with an overall reduction of approximately 85%. The saved costs are due mainly to personnel, phone bills, office assets and non-conformities. On the other hand, research carried out by A. T. Kearney in 2001 on 5,000 companies (Bradley,Griffiths,& Mahler,2001) registered a degree of adoption of E-procurement solutions equal to 8–10% with often disappointing outcomes, which were mainly due to a combination of the following critical issues: the E-procurement software is hard to integrate with the other company legacy systems; catalogue management is quite more difficult than it was previously expected; users have not found the new system so friendly and easy to

use as it was earlier promised; the impact on the cultural and organisational changes of the company is not trivial and often exacerbated by a lack of redefinition of the tasks and the roles of the personnel involved; each division has adopted a different E-procurement solution, thus generating a mosaic of applications not mutually interfaced.

Before companies launch EC by migrating their businesses onto the Internet, careful planning of the migration is necessary. With KLM, a Dutch cargo company, Christiaanse and Zimmerman (1999) discussed the requirements needed and challenges faced when potential companies adopted use of electronic channels as well as how KLM applies electronic channels to reduce costs and improve responsiveness among several different parties. Flynn (2003) used a case study to examine electronic procurement systems to identify the drivers that foster implementation.

Srinivasan *et al.* (2000) pointed out that by migrating the supply chain onto the Internet, both the key players and organisational activities would be adjusted, accompanied by both challenges and opportunities. Such challenges and opportunities include careful planning of the ways that people integrate changes, and the benefits that the Internet can bring to the business such as reduction in overall costs, respectively.

Steinfield et al. (2000) studied the effects of e-commerce on buyer-seller relationships. Their conclusion is that Internet lessens the buying company's dependence on its primary supplier and the use of the Internet is most beneficial for

small companies in that it allows them to connect to external markets. Using survey research, suppliers are found to play an important role in buyer adoption of and intent to use E-procurement (Deeter-Schmelz, *et al.,*; Bizzari; Graham & Howdyshell, 2001).

Gebauer Bean and Segev(1998) studied the impact of the Internet on the procurement, in particular the transaction process of a procurement department focusing on the impact of buyer–supplier relationships over the Internet. They introduced a scale of six measurements for the requirements of a procurement function in the Internet, ranging from cost, time, satisfaction, quality, stock, and value.

Eakin (2003) categorizes the benefits into transaction, compliance, management information, price, and payment and showed a way to measure them. NECCC (2001) analyzes components of benefits and costs, tangible and intangible. The council's report argues the necessity of a return of investment (ROI) analysis based on benefits and costs and advises that one difficulty of this type of analysis is due to intangible and hypothetical benefits.

Loebbecke, Powell, and Gallagher (1999) illustrated how the largest academic bookseller, Co-op Bookshop, launched EC and the difficulties that they faced when competing globally. They suggested that a company should study the existing customers and markets before it deploys EC on the Internet. They also provided guidelines about the resources required for setting up and maintaining a Web site and ways to integrate the existing business into the Internet.

Matsuda (2000) investigated the barriers for the adoption of the Japanese electronic produce market system (EMS) by examining the current status of the produce market, and suggested a way to implement EMS under the current status around such market.

Because the Internet is systematically reducing transaction costs, many companies are simplifying their business model and unbundling many business functions (Nevens, 1999). GE and Thomas Publishing TPN Register significantly transformed their purchasing function by aggregating and electronically posting the requirements, thereby increasing the efficiency of the market and international participation (Margherion, 1998). Member companies of the TPN Register achieve approximately 10 to 20 percent savings associated with the $15 billion annual flow of transactions by performing cheaper searches that provide access to a larger number of suppliers, from better coordination of the buyer and supplier through electronic requests for quotes, and from the lower error rate of wholly electronic purchasing processes (Applegate, 1995) (Nevens, 1999).

A study by Eyholzer and Hunziker (2000) shows that only 18 percent of the Swiss companies analysed used electronic product catalogs, auctions or requests for quotations in procurement in the year 2000. According to this study, however, many companies were planning to implement E-procurement systems at that time. Other studies show similar proportions for other countries (for the USA, for example, Industrial Distribution, 2001; The Institute of Management & Administration, 2000).

A recent Aberdeen Group (2001) study of spending analysis practices of 157 organisations revealed that only a few organisations truly know and understand how much they spend, on which products, and with which suppliers (Bushell, 2004).

Boyer and Olson (2002) conducted a survey of 416 E-procurement users (of Office Depot) and studied the success factors in procurement of indirect material. The data and its step-wise regression analysis supports that buying companies indeed realise performance benefits from E-procurement and identifies drivers of success. The drivers of performance success are categorized into the characteristics of the Procurement Company (strategy and environment) and Internet factors (Internet related and site-specific).

Johnson and Whang (2002) investigate the success factors and challenges to the implementation of E-procurement, one initiative that promises to deliver significant savings to the organisation. Overall, it appears that E-procurement is still in its early stages of adoption in the corporate world.

## 4.10  Best Practice Case Studies

### 4.10.1 Donnelly Corporation

Donnelly Corporation, a global company based in Holland, MI, manufactures a diverse range of products and is focused on developing, designing and producing the sophisticated electronics hardware and software, and exterior systems that will shape the car of the new millennium. After a study of its global structure, Donnelly determined that it was significantly increasing its presence in the Tier One automotive world and it needed to address its sourcing and procurement operations.

It began the task of centralising its three independent US-based procurement operations in an effort to leverage opportunities resulting from increased industry sales. Under the decentralised structure, the material costs typically were rising at the rate of inflation and some limited savings were being realised.

After centralising Sourcing and Procurement, Donnelly created its first strategic plan, the "Donnelly Procurement Plan". After one year, Donnelly was able to see a 5.2 percent swing in projected materials cost, a 25% improvement in supplier quality measures, and was on target for a 50% reduction in the size of its production supply base (Jeffrey,1998).


### 4.10.2 City of Helsinki

In the public sector, the City of Helsinki illustrates world class implementation of E-procurement by establishing a Financial Shared Service Centre (SSC) with centralised purchasing.  All orders are conducted electronically. The city has been able to realise a very high degree of automation and a matching rate greater than 80% using business rules and contract-based matching.  Now their employees only need to address exceptions, which the systems direct them to when business rules are violated.  The city does not handle system maintenance or tie up IT resources because under the Software-as-a-Service (SaaS) model, a software vendor hosts the application on its own site and handles system maintenance and upgrades.  The city pays a monthly licence fee to use the software, which is available to users through a Web browser, thus allowing the procurement professionals to focus on strategic issues such as spending priorities and choosing vendors and suppliers based on key value they provide to the company.(Tavi,2008)

### 4.10.3 Baker Hughes

Baker Hughes, an oil-field Services Company headquartered in Houston, has integrated strategic sourcing and E-procurement with good initial success. In designing its strategic-sourcing initiative, Baker Hughes recognized that its traditional approaches had failed to deliver the promised benefits. Romy Gibbons, the company's Strategic-Sourcing team leader, explains "Our historical approaches ranged from individual divisions developing supplier agreements to several divisions collaborating on the development of supplier agreements. In most cases, use of these agreements was voluntary from the end-user's perspective, and most used the ordering and payment process of their choice. There was little consistency in our approach to working with the supply base, no real commitments to our suppliers in terms of compliance with agreements, and little use of common processes. The resulting agreements may have been well thought out and negotiated, but the required level of buy-in from the organisation was just not present".

To address these issues, Baker Hughes first focused on properly structuring the strategic-sourcing initiative. The company set up full-time sourcing teams for each commodity and assigned leadership and accountability for the overall effort within the Executive Leadership Team. Divisional participation was made mandatory, with each division being represented on a Commodity Advisory Board. With this structure in place, each commodity team then received responsibility for simultaneously executing along two separate but integrated work threads-sourcing and infrastructure. While the sourcing activities focused ultimately on delivering a supplier agreement, the infrastructure thread sought to put in place the necessary process,

technology, and organisation elements to ensure realisation of the negotiated benefits.

Office supplies are one area in which this approach has been applied successfully. Baker Hughes consolidated hundreds of vendors into a single, national supplier. Yet, while consolidation is common to many sourcing efforts, the uniqueness of this particular example lies in its heavy emphasis on:

- Establishing a common, user-friendly, and efficient process that encourages end-user compliance with the established agreement
- Aggressively tracking agreement compliance and benefit capture
- Putting in place a commodity coordinator to manage the commodity and the supplier relationship

Today, all end-users place orders via E-procurement and use procurement cards to pay for all purchases. The success of this integrated approach is evidenced by early feedback from the account manager for one new supplier "Midway through the implementation, my Internet Group came to me to ask the secret of how Baker Hughes got such high compliance with use of E-procurement. They hadn't seen anything near that high with any other customer. I told them that Baker Hughes just designed it that way and made sure their people knew the process" (Corini,2000).

## 4.11  Summary

These studies clearly show that, regardless of the strategy adopted for the transition to E-procurement, the realisation of these solutions requires a rigorous analysis of the current corporate processes and a possible review and re-engineering of these processes, according to the principles of the business process re-engineering (BPR) theory (Hammer and Champy, 1993).

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Due to the uniqueness of the economic condition, geographic characteristics, and culture/political backdrop in Africa, in particular Zimbabwe, certain modifications in E-procurement implementation would be in order. In fact, some of the problems these solutions try to address do not exist in Zimbabwe. Most of these models in the developed countries use value systems based on the language, culture, and resources of the respective developed country to assess the benefits and costs in the feasibility study. Thus, the results may not be generalized for Zimbabwe. One of the biggest differences is the trust factor. The legal system in Europe and Asia is not perfect, but it is the ground rule upon which everyone operates. In Zimbabwe, trust is still based on human relationships, thus limiting the degree of co-operation that can take place among organisations.

Literature has revealed that it is useful to keep in mind those benefits and costs of E-procurement and strategic sourcing are industry-specific. Thus, the impact of E-procurement on strategic sourcing in private organisations will differ from public organisations.

This chapter covered the empirical literature of E-procurement and Strategic Sourcing across countries and industry sectors. This chapter also looked at the reasons for implementing E-procurement in Zimbabwe, in particular CBZ Bank, and other organisations around the world. Suitable analytical methodology for the study at hand is in the subsequent chapter, Chapter 5.

# CHAPTER 5: RESEARCH METHODOLOGY & DESIGN

## 5.1  Introduction

This chapter discusses the research methodology used in this study. The research instruments used and data collection procedures followed are also discussed.  The population and samples used in the study are considered. Van der Walt *et al.* (1998) states that classification of all available research designs in the marketing research methodology is very broad and designs overlap. The overlap is a result of different objectives addressed by each design, which may ultimately touch on others. Any method can be used in gathering data but the choice depends on the objectives of the study and how the parameters being investigated are to address the questions being asked.

**preparation**
- select case
- design data collection
- theoretical perspectives
- empirical literature review

**data collection**
- interviews
- questionnaires
- observations
- company data records

**analysis**
- questionnaire analysis
- interview analysis
- stage of integration compared to literature

**implications**
- lessons learnt and future research
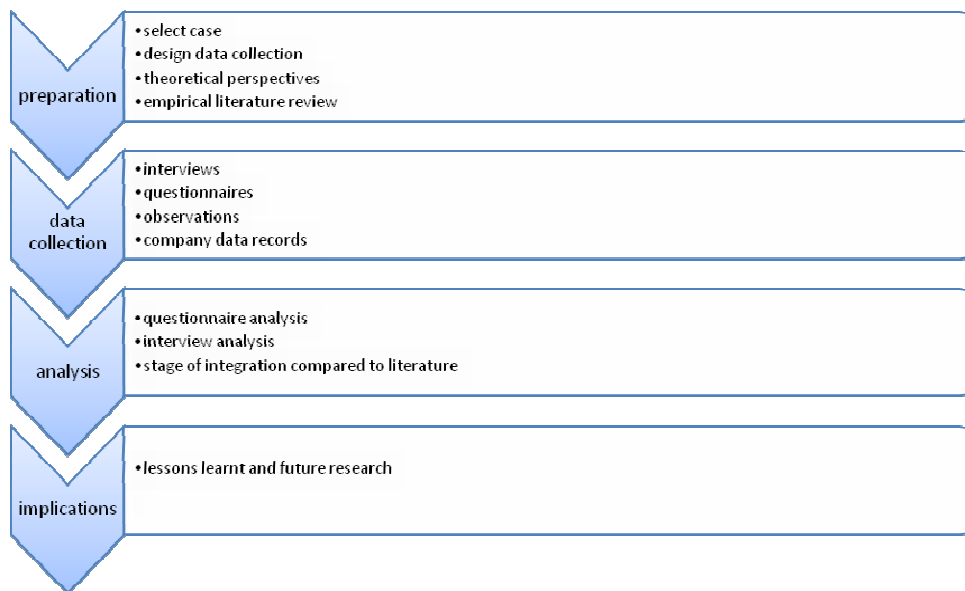
**Figure 5. 1- Flowchart of Research Method**

## 5.2    Problem  Statement

> **What role and impact does implementation of E-procurement have on CBZ's Strategic Sourcing processes?**

The purpose of this research was to establish the impact of E-procurement on Strategic Sourcing in CBZ Bank, and if the bank is ready to implement E-procurement to complement its strategic sourcing activities. In addition there was need to further establish what factors must be evaluated and what are the relative weights of these several factors in assessing the impact of E-procurement on strategic sourcing in CBZ Bank.

Major changes are currently taking place globally within procurement functions of informal and formal business entities.   The role of procurement has changed considerably due to advances in information technologies and information systems. Significant gaps currently exist in our understanding of the role of procurement in our organisations today.   As organisations become increasingly involved in cost reduction projects, the impact of procurement has become evident.   The procurement function is shifting its focus from daily procurement activities to long term, value adding procurement initiatives.   At the same time procurement is responding to the challenges and opportunities of electronic procurement (E-procurement), which refers to the utilisation of the internet to buy and sell products and services.

Sub-problems include the following:

- What are the current uses of internet-based technologies in CBZ Bank?

- What are the E-procurement drivers and barriers of the sample organisation?

- What are the key success strategic sourcing factors and E-procurement key success factors?

- Is CBZ ready to implement E-procurement?

The purpose of this paper was to develop a better understanding of the impact of E-procurement on Strategic Sourcing in a commercial bank by providing answers to the following research questions:

**RQ1. What are the current uses of internet-based technologies in CBZ Bank?**

**RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?**

**RQ3. What are the key success strategic sourcing factors in CBZ Bank?**

**RQ4. What are the E-procurement success factors in CBZ Bank?**

**RQ5. What are the perceived benefits/transformations resulting from E procurement initiatives in CBZ Bank?**

## 5.3 Hypotheses/Propositions

The study was premised on the hypothesis that E-procurement has a positive influence on Strategic Sourcing practices in an organisation.

The sub-hypotheses of the study are as follows:

*H1:* *Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites*

**H2:** *Use of internet-based technologies is positively related towards enablement of E-procurement*

**H3:** *Price reduction, improved market intelligence and market are the major drivers to uptake of E-procurement*

**H4:** *Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement*

**H5:** *Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practices*

**H6:** *Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement*

**H7:** *Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement*

**H8:** *CBZ Bank is ready for uptake of E-procurement*

## 5.4    Research philosophies

Angell (2004) states that, the core concepts underlying all forms of research are their methodologies. Research procedures have to be adequately backed by research methodologies, which are meant to structure the study, the acquisition of data and ultimately its arrangement to logical relationships. Research philosophies are meant to bring up a body of knowledge that can be used in future to solve problems and usher in new knowledge that can be used to develop the societies that we live in. Angell (2004) further defines research as a process through which researchers try to systematically answer questions to problems with the support of data. The answering of questions is done with the aid of data and the data is collected through a research methodology. A research methodology has eight characteristics as follows:

- Research originates with a question or a problem

- Research requires clarity on objectives

- Research follows a certain plan of procedure

- In research, the main problem is divided into sub problems

- Research is guided by a specific research problem, question or hypothesis

- Certain critical assumptions are accepted

- Collection and interpretation of data is also an important characteristic

- Research is cyclical and helical

There are two main research paradigms or philosophies, which are Positivistic and Phenomenological as shown in Table 5.1 below.

**Table 5. 1-Alternate terms for the two main research paradigms**

| Positivistic Paradigm | Phenomenological Paradigm |
|---|---|
| - Quantitative | - Qualitative |
| - Objectivist | - Subjectivist |
| - Scientific | - Humanistic |
| - Traditionalist | - Interpretivist |

Source: Adapted from Hussey (1997:17)

The extreme ends of the two paradigms in terms of core ontological /nature of reality are as shown in Table 5.2 below.

### 5.4.1  Positivistic philosophy

There are those assuming that the social world is the same as the physical world. The ontological assumption is that reality is an external concrete structure which affects everyone. As the social world is external and real, the researcher can attempt to measure and analyze it using methods such as laboratory experiments.

### 5.4.2  Phenomenological philosophy

Reality is seen as a projection of human imagination. Under this assumption, there may be no social world apart from that which is inside the individual's mind.

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**Table 5. 2-Assumptions of the two main Paradigms**

| Assumption | Question | Positivistic | Phenomenological |
|---|---|---|---|
| Ontological | What is the nature of reality? | Reality is objective and singular, apart from the researcher | Reality is subjective and multiple as seen by participants in a study |
| Epistemological | What is the relationship of the researcher to that being researched? | Researcher is independent from that being researched | Researcher interacts with that being researched |
| Rhetorical | What is the language of research? | Formal | Informal |
| | | Based on set definitions | Evolving decisions |
| | | Impersonal voice | Personal voice |
| | | Use of accepted quantitative words | Use of accepted qualitative words |
| Methodological | What is the process of research? | Deductive process | Inductive process |
| | | Static design. Categories isolated before study | Emerging design Categories identified during research process |
| | | Context free | Context bound |

Source: Adapted from Creswell (1994:26)

The study in this project was both positivistic and phenomenological in the sense that it had a problem, a clearly defined question, clearly stated objectives, produced quantitative data, precise and highly specific data, context bound, generalised from sample to population, the researcher interacted with the organisation being researched and that its reliability was high.

The summary of the Research Methodology is shown in Table 5.3 below.

**Table 5. 3-Summary of Research Methodology**

| Summary of Research Methodology | | |
|---|---|---|
| | **Advantages** | **Disadvantages** |
| **Participant Observation** | First hand knowledge<br><br>More accurate interpretation and understanding of behaviour, attitude and situation<br><br>Capturing of the dynamics of social behaviour | Researcher bias<br><br>Difficult to translate events and happenings into scientifically useful information |
| **Interviews** | Gain relevant research information<br><br>Gain additional insight | Poorly constructed questions can result in bias ad selectivity<br><br>Response bias |
| **Questionnaires** | Ensures all areas addressed. | Needs more follow ups<br><br>Some respondents opt not to answer questions |
| **Secondary Sources** | Stable, exact and broad coverage | Difficult to retrieve<br><br>Selectivity and reporting bias |
| **Qualitative Analysis** | Caters for unexpected responses | Difficult to quantify, possibility of bias |

## 5.5    Research Design

Two issues should be considered while employing a case study methodology. The first is whether the case is distinctive and unique, and the other concerns the feasibility of the data collection. In this paper, the case was deemed to be distinctive and unique because it was the first banking case in Zimbabwe to implement a Rosetta Net-like for B2B process integration. Also the data collection was deemed feasible because the author was familiar with the bank's operations, and was therefore able to interview staff members to acquire more data and information.

A comparative analysis research design was used to compare the traditional procurement processes to the E-procurement processes. Lessons were also drawn out of best practices in the E-procurement systems from other countries, namely United Kingdom, USA, Australia and Asia. There are several research designs and Babbie (1980), and Wimmer and Dominick (1994) discuss some of them. The research used a combination of literature and case study research, whereby literature provided the theoretical and empirical foundations and the case study was used to identify the critical research challenges.

### 5.5.1  Case study approach

The case examined was CBZ Bank; a leading local commercial bank in the banking sector. In the backdrop of the research framework, a comprehensive survey questionnaire was designed to fulfil the research objectives.

Best and Kahn (1993) stated that a case study is a way of organising social data for the purpose of viewing reality. It also examines a social unit as whole. The unit may

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be a person or community. The purpose is to understand the life cycle or an important part of the life cycle of the unit. Case studies try to pull together a wide variety of issues about the defined case, then present the information as a unified whole. Case studies fall under descriptive research because they seek to describe in depth, relationships among specific behaviours, thoughts and attitudes (Ary; Jacobs & Razaviah, 1985).

Case study research can be characterized as qualitative and observatory in nature, using predefined research questions (Yin, 1994). The case study research methodology is particularly well suited to information systems (IS) research (Benbasat, Goldstein, & Mead,1987;Darke,Shanks & Broadbent,1998; Eisenhardt 1989 ).

It aims to obtain an in-depth understanding of the phenomenon and its context (Cavaye 1996). Case studies enable researchers to investigate pre-defined phenomena without explicit control or manipulation of any variables (Cavaye 1996;Darke,Shanks,& Broadbent 1998; Yin 1994). They serve to capture the reality and richness of organisational behaviour in detail (Gable, 1994; Galliers,1992). Yin (1994) further argues that case studies are appropriate when the object is to study contemporary events.

Experimental research, investigative research, historical research, archival record analyses and case studies are five common methods for social science research (Yin, 1994). Among these methods, when the problem being researched involves a large number of variables and the important issues relate to existing problems, then

case studies offer a better approach (Yin, 1994). Gable (1994) compared the advantages and disadvantages of case study research, investigative research, and experimental research and found that case study research has a higher exploratory capability. Yin (1993) listed several specific examples related to education and management information systems along with the appropriate research design for each case. Moreover, Benbasat *et al.* (1987) concluded that three advantages exist to using case study research within the information management field:

- The current situation can be understood in a natural and un-manipulated environment, and theories can be derived from actual observations

- It is easier to understand the essence and complexity of the process

- Facing rapid changes in terms of information management, it is easier to obtain new insights on the research topic using this method


**Advantages of case studies**

According to the aforementioned advantages, the case study method was appropriate for this study because it centered on the implementation of a collaborative information system, E-procurement . The research was based on a case study approach. Robson (1993:5) defines case study research as "A *strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real context using multiple sources of evidence".* The case study approach has several advantages, including:

- A case study approach enables development of detailed knowledge about a particular case (Robson, 1993). One of the objectives of this project is to investigate how E-procurement impacts strategic sourcing processes within a particular commercial bank

- A case study helps to understand the complexity of a single case and its activity within a defined set of circumstances (Stake, 1995). Implementation of E-procurement in CBZ Bank is based on business conditions within a developing country (Zimbabwe) in Africa

- A case study is often employed, when the boundaries between a phenomenon and context are not clearly evident (Yin, 1993). The relationship between E-procurement and strategic sourcing is not clearly evident

- A case study approach is an empirical inquiry, which investigates a contemporary phenomenon within its real- life context (Yin, 1994) and is relying on the collection of evidence (Robson, 1993). This research project therefore utilises secondary data collection methods (analysis of bank documents, manuals and reports) and a primary data collection method (questionnaires and interviews)

- Anderson (1990) and Wimmer and Dominick (1994) state that case studies incorporate multiple data sources and looks for converging lines on inquiry. They use triangulation to interpret converging evidence, pointing to clear conclusion, thus enhancing reliability

- The other advantage is that a case study endeavours to satisfy internal validity and strives to understand the real issues affecting a situation being studied. It usually comes up with multiple evidence, thereby allowing those not involved in data collection to vividly understand and follow the analysis

**Disadvantages of case studies**

- According to Best and Kahn (1993), case studies threaten external validity because it is difficult to generalize on the basis of one case, which is in this project will only be applicable to one particular corporation and its subsidiary

- The other limitation of case studies is that objective data gathering and analysis may be threatened by subjective bias. There is a danger of selecting variable relationships based upon preconceived convictions, which may thus lead the researcher to have certain feeling about the validity of his /her conclusions. However, the bias can be eliminated through random sampling (Best and Kahn, 1993) (Anderson, 1990) (Angell, 1994)

- One of the major drawbacks of the case study approach is difficulty in drawing generalisations from a case study to the entire phenomenon. The extent to which we can draw generalisations from a case study depends upon the purpose of the case study. Stake (1998) makes distinction between intrinsic and instrumental case studies. An intrinsic case study is undertaken because one wants better understanding of this particular case, while an instrumental case represents a particular problem and provides an insight to an issue or helps refinement of theory. The choice of an instrumental case of a commercial bank is made to advance our understanding of the E-procurement and strategic sourcing.

### 5.5.2 Causality

The research was a causal study, that is, it sought to explain the relationship between strategic sourcing and E-procurement with regards to the impact of E-procurement on strategic sourcing. It was carried out only once and thus represented a snapshot at a particular point in time. Cooper and& Schindler (2003) describe such a study as a cross-sectional one. Hypothesis testing was predominantly quantitative

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and generalisations about the findings were based on the representativeness of the sample.

## 5.6   The Population and Sampling

### 5.6.1   The Population

A population is a group of individuals that have one or more characteristics in common that are of interest to the researcher (Best and Khan, 1993). According to Babbie (1989), a population is an aggregation of elements from which a sample is selected. The population may be all the individuals of a particular type or a more restricted part of that group. The research involved data collection through interviews and self-completed questionnaires of a random sample.

The study was based on a Zimbabwean wholly owned listed commercial bank in the financial services sector,namely CBZ Bank Limited.  At the time of the study the staff compliment was 824. The bank has one centralised Procurement Department based at the Head Office. The Head Office operations of the bank are mainly concentrated in the country's capital city, Harare. The commercial bank has 38 retail Branches distributed across the country which have been further split into 3 regions, namely, Regions 1 to 3. The authority to carry out the study was granted by the Managing Director of CBZ Bank.

Potential survey respondents in Zimbabwe are generally ultra sensitive to issues of confidentially partly in view of the prevailing political and economic conditions. The

research made use of questionnaires and structured interview questions (see Appendices 2 and 3) that did not compromise the identity of the respondent and the completion of survey questionnaires was completely voluntary. This was clearly explained in the introduction letter attached to the questionnaire (Appendix 2).

The researcher was assisted by five members to distribute and collect questionnaires and set up interviews. The team discussed the procedure to use in the distribution and collection of questionnaires. The data was analysed and compilation of the results was done under discussion, leading to conclusions and recommendations.

Table 5.4 shows the composition of the population and chosen sample for the study:

**Table 5. 4-Population Composition**

| Stratum | Population | Sampling Pool | Sample Size |
|---|---|---|---|
| **Region 1 branches** | Automated Banking Centre Hre | 2 | 2 |
| | Borrowdale | 2 | 2 |
| | Chinhoyi | 2 | 2 |
| | Chitungwiza | 2 | 2 |
| | Highfield | 2 | 2 |
| | Kariba | 2 | 2 |
| | Karoi | 2 | 2 |
| | Mhangura | 2 | 2 |
| | Westgate | 2 | 2 |
| **Sub-total** | 9 | 18 | 18 |
| **Region 2 branches** | Chipinge | 2 | 2 |
| | Chivhu | 2 | 2 |
| | Harare Cash Depot | 2 | 2 |

| Stratum | Population | Sampling Pool | Sample Size |
|---|---|---|---|
| | Kwame Nkrumah | 2 | 2 |
| | Marondera | 2 | 2 |
| | Masvingo | 2 | 2 |
| | Mutare | 2 | 2 |
| | Rusape | 2 | 2 |
| | Sam Nujoma | 2 | 2 |
| | Sapphire | 2 | 2 |
| | Southerton | 2 | 2 |
| **Sub-total** | 11 | 22 | 22 |
| | | | |
| **Region 3 branches** | Automated Banking Centre Byo | 2 | 2 |
| | Beitbridge | 2 | 2 |
| | Belmont | 2 | 2 |
| | Bulawayo 8thAve, | 2 | 2 |
| | Bulawayo Cash Depot, | 2 | 2 |
| | Chiredzi, | 2 | 2 |
| | Gokwe, | 2 | 2 |
| | Gweru, | 2 | 2 |
| | Victoria Falls, | 2 | 2 |
| **Sub-total** | 9 | 18 | 18 |
| **Head Office Units** | Corporate & Merchant Banking | 4 | 4 |
| | Credit | 4 | 4 |
| | Executive | 4 | 4 |
| | Human Resources | 4 | 4 |
| | Information Tech. Infrastructure | 4 | 4 |
| | IT Software & Applications Mngt. | 4 | 4 |

| Stratum | Population | Sampling Pool | Sample Size |
|---|---|---|---|
| | Logistics | 4 | 4 |
| | Procurement | 4 | 4 |
| | Projects | 2 | 2 |
| | Retail Banking | 4 | 4 |
| | Risk Management | 2 | 2 |
| | Treasury | 4 | 4 |
| **Sub-total** | 12 | 44 | 44 |
| **Total** | **41** | **102** | **102** |

## 5.6.2  Sampling

**Sampling and sampling techniques**

Saunders,Lewis & Thornhill  *et al*. (2000) defines sampling as a procedure whereby a sufficient number of elements are selected from a given population. A sample is selected from a population in order to get a representative and unbiased data and information about a population. In the study, the researcher already knew about the target population that she was going to be investigating; therefore the population was first stratified, and then followed by systematic random sampling technique. Stratification technique is where the population is divided into known groups called strata, which share almost the same characteristics, consistent with the objectives of the study. The four strata were as follows: Region 1 branches, Region 2 branches, Region 3 branches and Head Office units and other stakeholders.

Sampling enabled the researcher to draw conclusions about the population. In addition, sampling in this study reduced research costs, increased the speed at

which data is collected, increased availability of the population elements and enhanced the accuracy of the results (Cooper and Schindler, 2003). Care was taken to ensure that the sample represented the characteristics of the bank staff members it purports to represent.

**Sampling methods**

Saunders et al (2003) broadly classified sampling methods into two types as discussed below.

Probability sampling

This sampling method ushers in probability or chance where the chance of each case being selected from the population is known and is usually equal in all cases. This means that it is possible to answer research questions and to achieve objectives that require estimating statistically the characteristics of the population from the sample obtained. As a result, probability sampling is associated with surveys and experiments.

Non-probability sampling

Under this method, the probability of each case being selected from the total population is not known and it is not possible to answer research questions or to address objectives that require making statistical inferences about characteristics of the population. It is still possible therefore to generalize from non-probability sample hence their frequent use in case studies.

Both probability and non-probability were used in association since the study is both a survey and case study, which endeavored to answer the "What?" and "How?" questions.

**Sampling techniques**

Once a suitable sampling frame has been chosen and actual sample size has been established, the most appropriate sampling technique is selected from the following as discussed by Saunders *et al.* (2003). Simple random sampling which involves selecting a sample at random from the sampling frame using either random numbers of a computer. The selected number is not put back into the sampling frame to avoid sampling the same number again.

**Systematic sampling**

Systematic sampling involves selecting the sample at a regular interval from the sampling frame. It involves calculating the sample fraction and then selecting subsequent cases systematically using the sampling fraction.

**Stratified random sampling**

Stratified random sampling, which is a modification of random sampling in which the population is divided into relevant and significant strata based on one or more attributes. A random sample (simple or systematic) is then drawn from each strata or subset.

Stratified Random Sampling was used to select sample per stratum from the various strata of the bank. This was chosen as it involved a heterogeneous population. The stratified random sampling method was used. This involved a heterogeneous population that was divided into a homogenous sub population (strata) and then simple random samples were selected from each stratum. A universal sample was used as it was the most reliable source of information.

Advantages

The simple random technique has the advantages that it gives an unbiased sample as each member of the population has an equal chance of being included in the sample.

Disadvantages

It is time consuming as it involves a lot of people who might not necessarily be involved in the survey.

**Cluster sampling**

Cluster sampling, is similar to systematic sampling, as there is need to divide the population into discrete groups prior to sampling. The group can be based on any natural occurring grouping. Clusters can be selected using simple random sampling while data is collected from every case within selected clusters usually randomly.

Multi-stage sampling is a modification of cluster sampling. It is usually associated with geographically dispersed population. The technique involves a series of cluster samples, each involving some form of random sampling.

A survey method of data collection was used, where data was obtained directly from individual respondents through personal interviews, telephone interviews and structured questionnaires. The bank's Branch and Head Office network was treated as mutually exclusive subgroups or strata or clusters. The study was constrained to include elements from each of the Branches and Head Office units or population segments and adequate data was required for analyzing the various sub-populations. The research design was deliberately skewed towards disproportionate sampling, that is, a larger sample was drawn from the Branches than Head Office units. The research body involved CBZ Bank executives, managers, non-managers,

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and other stakeholders. Prior to the full-scale administration of the questionnaires, a pilot test was carried out with limited questionnaires in order to improve questions for ambiguity. The technique used to choose the participating respondents is the simple random sample and was used to avoid bias in the selection of respondents.

### 5.6.3 Selection of participants

The research study was based on a Zimbabwean wholly owned, listed commercial bank in the financial services sector, CBZ Bank Limited.

A covering letter from Unisa SBL, letter of authorization and a copy of the questionnaire, were e-mailed to a random sample of Executive, Head Office and Branch managers.

From the combined list of potential respondents, a random sample of 102 respondents was generated. A total of 61 completed questionnaires were received, 1 questionnaire was not considered as most of the questions were not answered. The resulting sample was considered a convenient sample considering the challenges of data gathering for a study of this nature.

Data for this research study was gathered using a questionnaire study and interviews. The process commenced in April (2009) and ended in December (2009). A five-stage approach was used to generate five sets of questionnaire items to capture, the current uses of internet-based technologies in CBZ Bank; the E-procurement drivers and barriers that impact CBZ Bank; the key success strategic sourcing factors in CBZ Bank; the E-procurement success factors in CBZ Bank; the

perceived benefits/transformations resulting from E-procurement initiatives in CBZ Bank.

For each set, an initial list of items was generated based upon extensive theoretical and empirical literature review ( see Appendices 2 and 3). Five staff members were asked to examine the initial draft of the items for completeness, clarity, and readability. This feedback resulted in several modifications to each list. This process resulted in various items germane to a successful E-procurement implementation. Each item was worded so that it could be answered using a five-point Likert scale (1 equating to "strongly disagree" and 5 to "strongly agree"; 1 equating to "least important" and 5 to "very important"; 1 equating to "very low" and 5 to "very high").

The sample size for participating respondents comprised 12% of the total population. To avoid bias, only respondent numbers according to regions were used to identify the participating respondents. The 12% represented 102 respondents from the 12 Head Office units and 29 branches, being 9 (Region 1), 11 (Region 2) and 9 (Region 3). The stratification was done for each of the Bank's Head Office units and Branches that were involved.

The random sample of 102 respondents was drawn from CBZ Bank's Head Office units and its 38 (thirty eight) Branches. Each of the respondents was introduced to the study and invited to participate prior to sending the questionnaire. The purpose of the self-administered questionnaire was to provide information regarding the respondents' general knowledge of Strategic Sourcing and E-procurement and supply chains. Due to time constraints the single-respondent research setting was used as it is a widely accepted tool in research. The questionnaire was structured as

a series of Likert-type scales (1 = "strongly disagree" to 5 = "strongly agree"; 1 = "least important" to 5 = "very important"; 1 = "very low" to 5 = "very high"). Questions were simplified and made easily understandable so that they left little room for personal interpretation. To reduce the "halo effect", questionnaires were pre-tested before being distributed.

## 5.7 Instrumentation and Data Collection Techniques

### 5.7.1 Research instruments (Appendix 2 and Appendix 3)

Saunders,Lewis & Thornhill *et al.* (2003) examined some methods involved in primary data collection. They identified and discussed the methods as follows: Questionnaire; Informal Interviews; Document analysis.

However, an additional method of data collection included personal interviews with executives and senior management in CBZ Bank and external procurement professionals.

### 5.7.2 Data collection procedure

The primary methodology adopted by this case study is a qualitative approach (Leedy and Ormrod, 2005).Robson, 1993) (Denzin & Lincoln, 2000) (Silverman, 2000). The data collection methods employed in this research include participant and structured observations; semi-structured and in-depth interviews with key persons in CBZ Bank; a survey questionnaire distributed to branch management per  region; and analysis of secondary data such as reports produced by CBZ Bank. The key person's interview approach was chosen to provide data on CBZ Bank, issues and

problems that relate to procurement processes within the bank. The key persons were chosen on the grounds of their relevance to the project.

### 5.7.3  Participant observation

This is a qualitative method derived from the work of social anthropology. Its emphasis is on discovering the meanings that people attach to their actions. Under this method, the researcher attempts to participate fully in the lives and activities of the subjects that are being studied. That enables the researcher to share their experiences by not merely observing what is happening but also feel it. Observations involve watching people and situations, recognizing and noting what is going on rather than asking for information.

**Advantages**

- Participant observation heightens the researcher's awareness of significant social processes
- Some participant observation affords the opportunity for the researcher to experience 'for real' the emotions of those who are being observed
- Virtually, by its nature, all data collected are useful in helping to try and explain behaviours

**Disadvantages**

- It can be time consuming since all human behaviour is not exhibited one time
- It can cause difficulty by posing ethical dilemma for the researcher
- There can be high level of role conflict for the researcher

- The closeness of the researcher to the situation being observed can lead to significant bias

- Some organisations may not be accessible for observation

### 5.7.4 Structured observation

Structured observation is a qualitative means of gathering data, whose role is to tell how often things happen rather than why they happen. This entails making observations in a "free-flowing" manner, allowing the researcher to shift focus from one thing to another as new and potentially significant objects and events present themselves. This method is flexible in that the researcher can take advantage of unforeseen data sources as they surface. Its disadvantages include; time wasting through recording of trivialities whilst overlooking the essentials to the study and altering of actions and speech by respondents, as well as of the unfolding of events. (Leedy & Ormrod, 2005:145).

**Advantages**

- By virtue of its replicability, it usually yields reliable results

- After suitable training on measuring criteria, it can be used by anyone, therefore leaving room for delegation since it is time consuming

- It does not only record frequency of events but also relationship between events

- Data is collected at the time of occurrence in their natural setting therefore eliminating dependency on "second hand" accounts

**Disadvantages**

- The observer must be in the research setting when phenomena under study are taking place. There is no remote control measurement

- Research results are limited to superficial indicators from which the observer must make inferences

- The method makes data collection time consuming and expensive

### 5.7.5  Semi-structured and in-depth interviews

Under this method, the researcher has a clear list of themes and problems to be covered although without specific questions. Depending on the nature of the interview, certain questions may be omitted or included to explore research questions and objectives. These may take the informal dimension. There is no predetermined list of questions to work through, and the respondent is given an opportunity to freely talk about issues.

Interviewing is a face to face interpersonal role situation in which an interviewer asks respondents questions designed to obtain answers pertinent to the research hypothesis. The questions resemble questionnaires in their purpose but they allow for greater depth of responses and they solicit for depth responses such as emotions, experiences and feelings. This is the main reason why interviews were used in this research.

These were used to get responses to the standard questions on the questionnaires. Informal interviews were also extended to other stakeholders such as suppliers,

directors and procurement professionals. These informal interviews sought to clarify issues covered in the questionnaire.

### 5.7.6  Interviews

The interviews aim at collecting mainly qualitative data and they occur on a face to face basis or by telephone and on a one to one basis or by interviewing a group. It is an approach based on personal research with the interviewer in contact with the respondent.  It allows the interviewer to probe and ask follow up questions to the respondent.  This method tends to be time consuming and resource intensive.  The telephone interview is more convenient for information gathering.  However, one has to keep the interview short and it also limits the number of respondents where telephone numbers are not listed or the respondent is not near the telephone when the call is made.  This method allows for a large number of respondents at a given time and is relatively inexpensive to administer.  However, responses tend to be slow or at times the questions are misinterpreted.


**Advantages**

- Semi-structured and in-depth interviews are explanatory in their nature and therefore addresses issues beyond the horizon
- Their explanatory nature allows information exchange to be discussed beyond just giving statistical data
- Interviews are personalised, permit in depth responses, and are flexible and adaptive
- Valid data is obtained as there is direct contact and data is from the source. The interviewer can adopt a situation that suits each subject. By establishing

rapport and trustful relationship, the interviewer can often obtain data that subjects would not give on a questionnaire

- The interview may also result in more accurate and honest responses since the interviewer can explain and clarify both the purposes of the interview and individual questions. Also in an interview the interviewer can follow up on incomplete on unclear responses by asking additional probing questions

- The main advantage that was noted was the quick response rate and this method also afforded room for probing

**Disadvantages**

- Interviews are expensive, time consuming or may intimidate or annoy respondents

- Its findings, as suggested by Babbie (1989) may be difficult to analyse

- There is lack of anonymity and also lack of reliability

- They generally involve small groups and require training of interviewers

- The responses given by a person may be biased and affected by his or her reaction to the interviewer positively or negatively

### 5.7.7  Surveys

The empirical study was carried out to test the theoretical model and hypothesized relationships based on a survey questionnaire sent to CBZ Bank Head Office and Branches.  As a principle, a survey can be used as a method of collecting data under other methods.

**Advantages**

Surveys can be used to investigate problems in realistic settings. Wimmer and Dominick (1994) consolidates his argument to say that consumer behaviour patterns can be examined where and when they happen rather than artificial conditions, such as those found in a laboratory. He further claims that surveys are cheaper to conduct considering the amount of information gathered and that large amounts of data can be collected with relative ease from a wide variety of people. Surveys allow researcher to examine many variables such as demographic and lifestyle information, attitudes, motives and intentions.

**Disadvantages**

Wimmer and Dominick (1994) however argue that survey research is not a perfect research methodology since most independent variables cannot be manipulated, thus the researcher may not know whether relationships between independent and dependent variables are causal or non-causal. The other disadvantage is that inappropriate wording and placement of questions within a questionnaire can bias results. The author further argues that in surveys, the researcher may talk to wrong people, that is, respondents giving false claims about situations. The unwillingness to participate by targeted respondents adds up to the list of disadvantages. The following data collection procedure was done for this particular study. Dates of interviews were noted. With the help of the bank's e-mail listing chosen respondents were made to complete questionnaires. The major assumption in determining the sample size was that the characteristics of the respondents under study conform to a normal distribution. The main method used to gather most of the data was the use of a questionnaire (see Appendix 2). Questionnaires were distributed to a sample of

respondents within the bank's Branch and Head Office network who were involved in procurement processes. Interviewees were interviewed during working days at lunch hour or after work at the respective bank's premises.

The steps followed in the data collection procedure are stated below.

- Setting appointments

  Appointments with chosen executive/senior manager respondents were made through email and were later confirmed through telephone calls

- Data Collection/Interview

  The questionnaire was available in English. Each respondent who was in the sample was interviewed or sent the questionnaire once. Before the interview/completion of the questionnaire each respondent was assured that the information will be kept confidential and would only be used for the research without divulging names. The information would also not be used to prejudice the respondent.

  The distribution of the questionnaires was done electronically by e-mail or by overnight mail bags for branches that were offline. This was done so as to ensure that the questionnaire was answered instantly and to make sure that all questionnaires were answered and returned back to the researcher. Each respondent in the sample was asked to complete the questionnaire privately and voluntarily away from other respondents so as to avoid bias and being influenced by other respondents.

Apart from the questionnaire, interviewing technique was used to collect data from the executives/senior management. The interviewer asked respondents questions

pertinent to the research hypothesis. Informal and formal interviews were also extended to other stakeholders such as suppliers, other executives/senior management in CBZ Holdings subsidiaries and other stakeholders. These formal and informal interviews sought to clarify issues not covered in the questionnaire.

Secondary data in the form of reference materials, CBZ Bank's policy and procedure manuals, CBZ Bank's financial statements and print media were extensively used, and this also involved local and international materials on E-procurement and Strategic Sourcing. The Internet was also extensively used. This helped to illustrate the impact of implementation of E-procurement on Strategic Sourcing worldwide and strategies being undertaken for the continued sustainability of efficient and effective supply chain processes.

**Justification of using a survey**

It is therefore against this background strength that a survey was used in this research to investigate trends, benefits and challenges of E-procurement and Strategic Sourcing in realistic settings. Wimmer and Dominick (1994) consolidates his argument to say that consumer behaviour patterns can be examined where and when they happen rather than artificial conditions, such as those found in a laboratory. He further claims that surveys are cheaper to conduct considering the amount of information gathered and that large amounts of data can be collected with relative ease from a wide variety of people. Surveys allow the researcher to examine many variables such as demographic and lifestyle information, attitudes, motives and intentions.

A number of steps were taken to maximize the response rate to the survey based on procedures recommended by Dillman (1978). The survey instrument was available in both hard copy and online.

### 5.7.8  Justification of data collection methods

The study used historical data, semi-structured interviews and questionnaires as the method of data collection. However, the study relied on the questionnaire as the key method because it identified and captured questions about a subject. For this particular study a questionnaire was designed, with both closed-ended and open-ended questions. The question design was such that certain key questions about E-procurement and Strategic Sourcing were asked by capturing a known number of respondents. The responses to known questions were quantified and described.

The questionnaire method presented questions as a guide and enabled the respondents to only give back to the researcher what he wanted to hear and understand. In terms of resources, the questionnaire was cheaper to administer than a situation where research assistants were sent out to assist. As a result of their structured natured, virtually all data collected was analysed. To augment questionnaires, personal interviews were conducted and these sought to get a deep insight of procurement processes in CBZ Bank, especially addressing those issues that were not captured in the questionnaires.

### 5.7.9  Secondary data

To enrich the study, the researcher made use of secondary data in order to establish trends, benefits, challenges and make comparisons. This constitutes secondary data and includes recorded data from various sources such as Research Papers, Bankers

Association of Zimbabwe (BAZ) statistical reports, CBZ Bank statistical reports, CBZ Bank procurement policy and procedures, CBZ Holdings statistical reports, papers and correspondences, as well as other local and international operations and supply chain publications. Secondary data in the form of reference materials were extensively used and this involved local and international materials on procurement, E-procurement and Strategic Sourcing. The Internet was also extensively used. This helped to illustrate the impact of implementation of E-procurement on Strategic Sourcing worldwide and strategies being undertaken for the continued sustainability of efficient and effective supply chain processes.

## 5.8    Data sources

The following data sources were accessed for this research study.

- Case study-CBZ Bank

- CBZ Bank and CBZ Holdings Company documents (strategy, policy and procedures)

- Primary data

- Secondary data

- Transcripts of interviews (structured and in-depth)

- Survey data/Questionnaire

- Personal observations

## 5.9    Procedure and time frame

Procedures and time frames were followed as shown in Appendix 6 (Table 5.5 and Table 5.6).

## 5.10  Analysis Plan

### 5.10.1 Analytical tools

The research questions were addressed and analysed one at a time using statistical tests to answer the research question. Table 5.7  summaries the analytical tools used in addressing the research questions and testing the hypotheses.

**Table 5. 5- Analytical Tools, and Types and Sources of Data for the Research Study**

| Research Question/Hypothesis | Analytical Tool | Types of Data | Data Sources |
|---|---|---|---|
| **RQ1.     What are the current uses of internet-based technologies in CBZ Bank?**<br>*H1:     Use     of     internet-based technologies is dominated by   e-mail,   search   for suppliers   and   visiting supplier's web sites.*<br>*H2:     Use     of     internet-based technologies   is   positively related towards enablement of E-procurement.* | Trend analysis, mean, standard deviation, SPSS  v17,MS Excel 2007 | Qualitative and quantitative | Branches  and  Head  Office  units; Case  study-CBZ  Bank;  Company documents  (strategy,  policy  and procedures);Primary data; Secondary data;    Transcripts    of    interviews (structured  and  in-depth);  Survey data/Questionnaire;           Personal observations |
| **RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?** | Trend analysis, mean ,standard deviation, | Qualitative and quantitative | Branches  and  Head  Office  units; Case  study-CBZ  Bank;  Company documents  (strategy,  policy  and |

| Research Question/Hypothesis | Analytical Tool | Types of Data | Data Sources |
|---|---|---|---|
| *H3:* *Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement.*<br><br>*H4:* *Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement.* | SPSS, MS Excel 2007 | | procedures);Primary data; Secondary data; Transcripts of interviews(structured and in-depth); Survey data/Questionnaire; Personal observations |
| **RQ3. What are the key success strategic sourcing factors in CBZ Bank?**<br><br>*H5:* *Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practice.* | Trend analysis, mean, standard deviation, SPSS, MS Excel 2007 | Qualitative and quantitative | Branches and Head Office units; Case study-CBZ Bank; Company documents (strategy, policy and procedures);Primary data; Secondary data; Transcripts of interviews (structured and in-depth); Survey data/Questionnaire; Personal observations. |
| **RQ4. What are the E-procurement success factors in CBZ Bank?**<br><br>*H6:* *Reduction in number of* | Trend analysis, mean, standard deviation, SPSS, MS | Qualitative and quantitative | Branches and Head Office units; Case study-CBZ Bank; Company documents (strategy, policy and procedures);Primary data; Secondary |

| Research Question/Hypothesis | Analytical Tool | Types of Data | Data Sources |
|---|---|---|---|
| *suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement.* | Excel | | data; Transcripts of interviews(structured and in-depth);Survey data/ Questionnaire; Personal observations |
| RQ5. What are the perceived benefits/transformations resulting from E-procurement initiatives in CBZ Bank?<br><br>*H7: Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement.*<br><br>*H8: CBZ Bank is ready for uptake of E-procurement.* | Trend analysis, mean, standard deviation, SPSS, MS Excel 2007 | Qualitative and quantitative | Branches and Head Office units; Case study-CBZ Bank; Company documents (strategy, policy and procedures);Primary data; Secondary data; Transcripts of interviews(structured and in-depth); Survey data/ Questionnaire; Personal observations |

## 5.10.2 Data Analysis plan

Data was presented in tables, graphs and pie charts. Trend analysis, gross margins and descriptive statistics were used as analytical tools for the study. Trend analysis focused on the implementation of E-procurement and Strategic Sourcing. The trend analysis is used as a management tool for both E-procurement and strategic

sourcing, globally, regionally and locally. The advantage of trend analysis is that one can forecast the future trends well in advance and that some aspect of the past behaviour of the variable being forecast will continue to be true in the future, thereby providing the basis for the prediction. The disadvantage of trend analysis is that no reference to the causal factors is made, which determine the volume of demand, in effect assuming that the time is the only determining, factor which needs to be taken into account. They also assume that the relationship between time and the variable being forecast is a very simple consisting only of a long-term trend.

The statistical component, ranking in particular was analyzed using a computer based Statistical Package for Social Science (SPSS v17), while construction of graph was with the aid of Microsoft Excel spreadsheet software 2007 and SPSS V17. According to Saunders *et al.* (2003), responses greater than 30 have to be statistically analyzed using a method of one's choice. For that reason, the end user responses were analyzed using SPSS v17 because it was the only reliable package available to the researcher.


Data coding was developed on all the questions before data entry,ranging from A1 to G1.  The data was then punched into SPSS software. The next step was data cleaning then the statisticians started the analysis process. The resultant information was compiled into a report.  This involved the examination, categorization, tabulation and presentation of results.  The selection of analysis approaches was justified.


Qualitative/quantitative methods were used to establish validity and reliability of data. In addition to the statistical analysis, each response received was validated through personal interviews by the researcher. The researcher interacted with the top

management of the bank to gain an insight into the business strategies and their focus towards supply chain competitiveness. Data from participant observation and interviews was considered qualitatively and quantitatively to assess the research questions.  Data from questionnaires was categorized in the different aspects of the research questions.

### 5.10.3 Validity and reliability

*Validity* refers to the accuracy or truthfulness of a measurement. Are we measuring what we think we are? There are no statistical tests to measure validity. All assessments of validity are subjective opinions based on the judgment of the researcher. Nevertheless, there are at least three types of validity that should be addressed and you should state what steps you took to assess validity.

*Face validity* refers to the likelihood that a question will be misunderstood or misinterpreted. Pre-testing a survey is a good way to increase the likelihood of face validity.

*Content validity* refers to whether an instrument provides adequate coverage of a topic. Expert opinions, literature searches, and pre-test open-ended questions help to establish content validity.

*Construct validity* refers to the theoretical foundations underlying a particular scale or measurement. It looks at the underlying theories or constructs that explain phenomena. In other words, if you are using several survey items to measure a more global construct (for example, a subscale of a survey), then you should describe why you believe the items comprise a construct. If a construct has been identified by

previous researchers, then describe the criteria they used to validate the construct. A technique known as confirmatory factor analysis is often used to explore how individual survey items contribute to an overall construct measurement. Validity (convergent, discriminant and content) is a scale's ability to measure what it sets out to measure (Walonick, 2005).

*Reliability* is synonymous with repeatability or stability. A measurement that yields consistent results over time is said to be reliable. When a measurement is prone to random error, it lacks reliability.  There are three basic methods to test reliability: test-retest, equivalent form, and internal consistency. Most research uses some form of internal consistency. When there is a scale of items all attempting to measure the same construct, then we would expect a large degree of coherence in the way people answer those items. Various statistical tests can measure the degree of coherence. Another way to test reliability is to ask the same question with slightly different wording in different parts of the survey. The correlation between the items is a measure of their reliability (Walonick, 2005).

Reliability refers to the extent different items measure the same underlying construct (Anastasi, 1988).  Reliability is defined as the ability of the scales to consistently yield the same response (Nunnally, 1978).  In classical testing theory, reliability is represented by the ratio of the true to the observed variance. The higher this ratio, the greater the reliability of the measure. The most widely used measure of reliability is the internal consistency method which provides an estimate of reliability for a given construct.(Carmines and Zeller,1979).

Several steps were followed in designing and validating the survey.  The initial step in designing the survey was to create an extensive and exhaustive list of items, that is, survey questions that were used in past literature on each construct, that is, E-procurement and strategic sourcing.

One objective of this research was to design a valid and reliable instrument that can be utilised in future studies.  To ensure this, the scale development phase was started with an extensive review of past literature to identify scales that have been utilised before and have been proven to be valid and reliable.  All the items used in past research were grouped according to the constructs identified in the questionnaire.  For constructs which were not empirically measured in past literature, items were created according to theoretical foundations provided in literature.

 All items are measured on a 1 to 5 point Likert scale, and will measure either a level of agreement or importance.  Previous research has shown that, although a larger range (a 1 to 7 scale) would capture more detail, it is unlikely that respondents will be able to differentiate between very fine distinctions in a limited time (Gupta  & Somers, 1992).

The response categories for the scales range from "strongly disagree" to "strongly disagree" for both constructs, except for relationships with key suppliers where the scale ranges from "agree completely" to 'do not know/no answer" and "very low" to "very high".

Some items were reversed to minimise response bias. Response bias results from the attitude and predisposition of respondents. One form of response bias is referred to as 'yea- and nay- saying', where the response is influenced by the global tendency toward positive or negative answers (Alreck & Settle,1985). As a result, the respondents indicate a positive response to all statements in scale. The most recommended way to minimise this response set, is to word some items positively and other items negatively.( (Alreck and Settle,1985))

Initial face validation of the item measures was achieved during the pre-test stage through interviews with other academicians. Pre-testing reduces the possibility of "halo" bias, in that questions are evaluated until a satisfactory wording and sentence structure is reached. Questions were simplified and made easily understandable so that they left little room for personal interpretation. After necessary edits were completed, preparations for the pilot study started, which involved five staff members(managerial and non-managerial). Two weeks later the survey was sent to branches in the 3 regions and Head Office units. Multiple questions were identified for each construct to ensure a high level of reliability, discriminant and convergent validity.

This research study was both positivistic and phenomenological in the sense that it had a problem, a clearly defined question, clearly stated objectives, produced quantitative data, precise and highly specific data, context bound, generalised from sample to population, the researcher interacted with the organisation being researched and that its reliability was high.

## 5.11  Assumptions

All research studies make assumptions.  The following are the assumptions for this research study:

- The sample will be representative of  the population
- The survey instrument will have validity and reliability in measuring the desired constructs
- The respondents will answer the survey/questionnaires/interviews truthfully
- The survey will be based on trust considering the sensitivity of the information requested from the bank
- Identities of respondents will be withheld except where consent has been given

## 5.12  Scope and limitations

All research studies have limitations and a finite scope. The following challenges were encountered during the study. However, measures were put in place to counter the following problems:

- No substantial information is available in Zimbabwe on E-procurement as this is a new trend in Zimbabwe. However information from other countries and continents was utilised
- Some respondents were not willing to give in information fearing that it would to be used to their disadvantage by the competitors or in-house.  However, an assurance was made to the respondents that the information would be kept

confidential to protect them and that the research study would be made available to the respondents for their benefit

- Information was not readily forth coming from respondents who feared reprisals from the superiors. The researcher had to approach the top management of the Bank for written undertakings that the staff members were free to participate and that the results were to their benefit

- Return of reasonable number of responses

- The study was carried out during the period when the country was having fuel shortages; hence the researcher had to use e-mail facilities and overnight mail bags to distribute the survey instrument and enumerate

- Work and family commitments were a major challenge hence the researcher had to do most of the work during the nights and during weekends

- E-procurement has been applied to business for many years in foreign enterprises. E-procurement in Zimbabwe is still in preliminary phase. This study investigated the trend of domestic e-business situation by studying the articles proposed by other famous foreign researchers who have discussed this issue critically

- However, prior to full development and flourishing of E-procurement in Zimbabwe, the results and applied theories of this study may still have a gap

- The study was limited to one local commercial bank located in Zimbabwe, due to the limited amount of time required to undertake the study

- The carrying out of research studies in Zimbabwe is viewed with suspicion, especially in the prevailing politically volatile environment.  There is fear of costly repercussions that can even lead to closure of the bank depending on

how the information is relayed or interpreted, if and when it reaches the regulatory authorities

- High profile respondents were not easily accessible in the case of executive respondents, which may compromise the quality of the data wherein junior staff members that may not be conversant with the subject were nominated as substitutes

- Experience of Researcher and Assistants. The researcher relied mainly on taught tactics and information read on how to conduct interviews and administer questionnaires. The aspect of bias both on the researcher and respondents' sides cannot be ruled out. Guidance and assistance from experienced researchers was considered in reducing incorrect interpretation of observations, reactions during interviews and ability to read between the lines during the interviews

In summary, the research constraints that the researcher experienced include time, power outages, and an unpredictable social and political environment. The researcher had to strike a balance between office work, family commitments and research work. In spite of the constraints the researcher submitted the research document.

## 5.13 Ethical considerations

- Ensure informed respondent consent
- The need to assure interviewee confidentiality
- Use of information for intended purposes only

- Integrity in reporting of findings

- Confidentiality

- Informed consent

- Debriefing participants

- The Researcher and her team will not apply force nor deceive respondents into giving information.  The purpose of the study will be presented to the target population and those willing respond.  The information given will be representative of what respondents will submit

- In addition, the study is an original piece of work, conducted under the research guidelines provided by Unisa SBL and the study leader.

## 5.14  Pre-test /Pilot study

Questionnaire and sample interview schedules were pilot tested.  A pre-test was conducted with five respondents (academics) before the questionnaire was revised to avoid non-applicable questions, ambiguous wording, and its appropriateness for executives in the organisation. Clear instructions were provided at the beginning of the sections. After pre-testing and further revisions, the survey questionnaire was produced in final form and used to collect the data.

## 5.15  Summary

In summary, the empirical part of this study started with the design of the survey instruments and determination of the target sample.  The responses to the questionnaire were analysed statistically, to test the hypothesized relationships.  The

chapter covered the research design, sample size determination, research instruments used and the main data-gathering instrument used. The research sample was made up of CBZ Bank management from Head Office units and Branches located in Regions 1 to 3. Other stakeholders were also interviewed. The next chapter elaborates on the steps followed in data analysis and the findings of this empirical study. The development of the methodology in this chapter guides the analyses and information presentation in Chapter 6.

# CHAPTER 6: RESEARCH RESULTS

## 6.1    Introduction

This chapter presents information, interprets and analyses the data that was collected through, questionnaires, interviews, unstructured interviews, secondary data and finally the discussion. The presentation and the findings give way to policy conclusions and recommendations in the subsequent chapter.

This chapter provides the results of statistical analyses employed for this study.  The data collection methodology was provided earlier in Chapter 5.  Section 6.1 provides an overall summary and profile of the respondents on three dimensions. The results indicate that the sample consists of respondents from Head office than Regions 1 to 3.   The remaining sections assess responses to the research questions, thus providing a well established survey instrument that can be used in subsequent research.   The survey instrument also provides an alternative tool for professionals and managers, who would like to understand the impact of E-procurement on Strategic Sourcing in their companies.

## 6.2    Description of the sample

This study investigated the attitudes to, and perceptions of, the impact of E-procurement on strategic sourcing held by staff members across CBZ Bank. The study had three objectives; firstly, to determine the current and planned use of E-procurement in CBZ Bank; secondly, to investigate the factors affecting adoption of

E-procurement; and thirdly, to assess the policy implications of E-procurement, particularly in relation to Strategic Sourcing. The research was conducted in the period from April 2009 to November 2009. There were two main stages to the research methodology, namely:

- A questionnaire survey and interviews sought to establish facts relating to the current and planned use of E-procurement, and to provide initial indications of factors that might explain usage

- One in-depth case study explored these factors in more detail

Questionnaire and samples interview schedules were pilot tested. A pre-test was conducted with five respondents (academics) before the questionnaire was revised to avoid inapplicable questions, ambiguous wording, and its appropriateness for executives in the organisation. Clear instructions were provided at the beginning of the sections. After pre-testing and further revisions, the survey questionnaire was produced in final form and used to collect data.

The interviews varied from one hour to one and a half hours in duration, and were transcribed. The content of the interviews clarified and explored the specific questionnaire responses for each interviewee in more detail, investigating the reasons behind and context for E-procurement decisions. A semi-structured interview format comprising 22 questions was followed (see Appendix 3).

A population is a group of individuals that have one or more characteristics in common that are of interest to the researcher (Best and Khan, 1993). According to Babbie (1989), a population is an aggregation of elements from which a sample is

selected. The population may be all the individuals of a particular type or a more restricted part of that group. The research involved data collection through interviews and self-completed questionnaires of a random sample. The study was based on a Zimbabwean wholly owned listed commercial bank in the financial services sector, namely CBZ Bank Limited.  At the time of the study the staff compliment was 824. CBZ Bank has one centralised Procurement Department based at the Head Office. The Head Office operations of the bank are mainly concentrated in the country's capital city, Harare. The commercial bank has 38 retail Branches distributed across the country which have been further split into 3 regions, namely, Regions 1 to 3. The authority to carry out the study was granted by the Managing Director of CBZ Bank.

CBZ Bank Branch and Head Office networks were treated as mutually exclusive subgroups or strata. The study was constrained to include elements from each of the Branches and Head Office units or population segments and adequate data was required for analyzing the various sub-populations. The research design was deliberately skewed towards disproportionate sampling, that is, a larger sample was drawn from the Branches than Head Office units.

Potential survey respondents in Zimbabwe are generally ultra sensitive to issues of confidentially partly in view of the prevailing political and economic conditions. The research made use of questionnaires and structured interview questions (see Appendices 2 and 3 for the specific questions) that did not compromise the identity of the respondent and the completion of survey questionnaires was completely voluntary. This was clearly explained in the introduction letter (see Appendix 2) attached to the questionnaire. The questionnaire was available in English.

The researcher was assisted by at least two members to distribute and collect questionnaires and set up interviews. The team discussed the procedure to use in the distribution and collection of questionnaires. The data was analysed and compilation of the results was done under discussion, leading to conclusions and recommendations.

The random sample of 102 respondents was drawn from CBZ Bank's Head Office units and its 38 (thirty eight) Branches. Each of the respondents was introduced to the study and invited to participate prior to sending the questionnaire. The purpose of the self-administered questionnaire was to provide information regarding the respondents' general knowledge of strategic sourcing and E-procurement and supply chains. Due to time constraints the single-respondent research setting was used as it is a widely accepted tool in research. The questionnaire was structured as a series of Likert-type scales (1 being "strongly disagree" to 5 "strongly agree"; 1 being "least important" to 5 "very important"; 1 being "very low" to 5 "very high"). Questions were simplified and made easily understandable so that they left little room for personal interpretation. To reduce the 'halo effect', questionnaires were pre-tested before being distributed. Table 5.4 in Chapter 5 shows the composition of the population and chosen sample for the study.

## 6.3 Survey Instrument

The researcher employed observations and survey analysis (questionnaires and interviews) approach to gather the necessary information and data vital to this research.

The survey instrument contained 121 questions, covering three areas:

- Demographics

- E-procurement practices

- Strategic Sourcing practices

Closed-end questions were used, with five-point Likert scale responses. Open-ended questions sought responses from the cohort, allowing for qualitative data to be collected. The email listing contained at least 150 potential respondents from CBZ Bank Head Office and branches. A number of emails were undeliverable, due to members of the cohort having moved positions, incorrect email addresses, changed email addresses or automatic out-of-office responses. Emails which were undeliverable, due to members of the cohort having moved positions, incorrect email addresses, changed email addresses or automatic out-of-office responses were shown. A total of 61 usable responses were obtained, only one was discarded. The overall response rate after removing the undeliverable addresses was 59.8% which was encouraging. This was due to the rapport established by the researcher with the respondents within the CBZ Bank. The researcher has worked in CBZ Bank for more than 15 years and that enhanced the responses.

The findings were presented in sections relating to the research questions, which were:

**RQ1. What are the current uses of internet-based technologies in CBZ Bank?**

**RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?**

**RQ3. What are the key success strategic sourcing factors in CBZ Bank?**

**RQ4. What are the E-procurement success factors in CBZ Bank?**

**RQ5. What are the perceived benefits/transformations resulting from e-procurement initiatives in CBZ Bank?**

Firstly, findings related to the current and the planned use of E-procurement are discussed. Secondly, findings concerning E-procurement drivers and barriers, key success factors affecting E-procurement adoption and strategic sourcing are presented.

## 6.4    Analyses

This section provides the results of statistical analyses employed for this study.

### 6.4.1   Reliability of measures

Multiple questions were identified for each construct to ensure a high level of reliability, discriminant and convergent validity.  Reliability is defined as the ability of the scales to consistently yield the same response (Nunnally, 1978).  The key question is "Are we getting consistent results over from our measures?". There are two types of consistency, that is, stability (over time) and equivalence. For Cronbach's alpha, a value above 0.70 is often considered to be acceptable for existing scales, whereas values above 0.60 are deemed sufficient for newly developed scales.  Tables 6.1 provides the results of the assessment of the scales using Cronbach's alpha and indicate that all scales had a Cronbach's alpha value above that defined by Nunnally (1978).

**Table 6. 1-Summary of Reliability Analysis**

| Scale | Cronbach Alpha |
|---|---|
| B: What are the current uses of internet-based technologies in CBZ Bank? | 0.978 |
| C1: What are the E-procurement drivers that impact CBZ Bank? | 0.958 |
| C2: What are the E-procurement barriers that impact CBZ Bank? | 0.958 |
| D: What are the key success strategic sourcing factors in CBZ Bank? | 0.927 |
| E: What are the E-procurement success factors in CBZ Bank? | 0.893 |
| F: What are the perceived benefits/transformations resulting from E-procurement initiatives in CBZ Bank? | 0.992 |

The results in Table 6.1 above indicate that the Cronbach alpha extracted values for all scales were above the minimum value required. Therefore, all items were retained for further analysis.

### 6.4.2 Crosstab

The average percentile for ordinal values, department/level/length of service and other variables (scale) in the sample is 55% thus supporting validity of all the variables.

### 6.4.3  Demographics

Responses were analysed with regard to:

- Department and location

- Present position

- Length of service

The participants in the study were categorized by regions, their current position and length of service. As the study focuses on one large local bank that is believed to be a procurement leader, the study cannot be considered representative for Zimbabwe as a whole.

Appendix 4 shows that the majority of respondents were from Head office even though the distribution of questionnaires was more skewed towards the branches within regions 1 to 3. Head Office had a 47.1% of the 59.8% of respondents.

Appendix 4 summarises the frequency distribution by department and organisational level respectively. The largest number of respondents came from the Head Office departments (47.1%) followed by Region 3 branches (5.9%). The majority of respondents by organisational level as depicted above came from managers whilst non managers represent the lowest number.  The majority of the respondents under the organisational level category were managers (26.5%). Nil responses were recorded from Executive members (EXCO). However, non managerial respondents represented 6%.

Appendix 4 summarises the frequency distribution by length of service within the bank. Staff members who have continuously served the bank for 11-15 years have the highest response rate of 23.5%.

The following main research variables were investigated.

### 6.4.4 Correlations

The Pearson correlation is a measure of linear association between variables. The correlation coefficient varies over a range of +1 through 0 to -1. The coefficient reveals the magnitude and direction of the relationship. The magnitude is the degree to which the variables move in unison or opposition while the coefficient's sign signifies the direction of the relationship (Cooper and Schindler, 2003). A correlation coefficient regardless of its magnitude, direction and statistical significance does not imply causation. Correlation does not prove causality. Statistical significance only reflects the likelihood of a linear relationship in the population. The closer the correlation is to 1, the stronger the relationship.

Appendix 5 shows positive correlations between most of the factors reflecting the likelihood of a linear relationship for the following variables at the 0.01 significance level:

- e-mail*search for suppliers 0.398
- fax*purchase capex assets 0.704
- online ordering*purchasing office supplies 0.856
- access e-markets* purchasing office supplies 0.855
- purchasing office supplies*place orders on supplier web sites 0.916
- place orders on supplier web sites*online ordering 0.932

### 6.4.5 RQ1. What are the current uses of internet-based technologies in CBZ Bank?

**H1:** *Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites*

**H2:** *Use of internet-based technologies is positively related towards enablement of E-procurement*

The respondents were asked to respond to the statement "We use internet-based technologies to..." and results are depicted in Table 6.2 below.

**Table 6. 2-Research Question 1 Descriptive Analysis**

| Variable | Mean | Standard Deviation |
|---|---|---|
| Email | 4.23 | 0.780 |
| Fax | 3.56 | 1.350 |
| Search for suppliers | 3.54 | 1.001 |
| Phone | 3.51 | 1.167 |
| Visit supplier's websites | 3.50 | 1.077 |

The use of internet based technologies was rated highest for E-mail at 28.4% with a Mean of 4.23. Use of internet based technologies was rated highly for e-mail and fax. Traditional procurement practices, such as the use of fax/mail/phone, still dominate both direct and indirect procurement in this sample. Thus suggesting that the bank's

pace in E-procurement uptake is somewhat moderate. As direct procurement is closer to core business processes, the use of E-procurement is more likely to be encouraged by major organisations such as CBZ Bank. Internet based technologies are mainly used for e-mail, fax, searching for suppliers, phone and visiting suppliers' websites. Findings in the sample data support the hypotheses, therefore -

**H1 is accepted.**

**H2 is accepted**

### 6.4.6 RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?

*H3*: ***Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement***

*H4:* ***Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement***

**E-procurement Drivers**

Respondents were asked to identify the 5 most important E-procurement drivers, ranking them from 5 (most important) to 1 (least important). A summary of the results is displayed in Table 6.3.

**Table 6. 3-Top 5 most important E-procurement drivers**

| E-procurement drivers | Focus | Mean | Standard Deviation |
|---|---|---|---|
| Improve effectiveness | Strategic | 4.31 | 0.609 |
| Enhanced decision making | Strategic | 4.31 | 0.589 |
| Reduced operational and inventory costs | Cost | 4.29 | 0.576 |
| Improve efficiency | Tactical | 4.26 | 0.589 |
| Enhanced inventory management | Cost | 4.22 | 0.664 |

Respondents rated "improve effectiveness" and "enhanced decision making" as the 2 most important E-procurement drivers. Other E-procurement drivers that respondents considered important included:

- Reduced operational and inventory costs

- Improve efficiency

- Enhance inventory management

- Shortened procurement cycle times

- Enhancing service delivery

The results indicated that the main E-procurement drivers were cost related and tactical in nature. The drivers that were ranked the lowest (reduction in number of suppliers, improved visibility of supply chain management) were closely related to the supply chain. This would be expected, as analysts predict that some of the major benefits with E-procurement would be attained in relation to indirect procurement. With reference to findings based on the sample data, the hypothesis -

**H3 is rejected**

**E-procurement Barriers**

*H4*: ***Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement***

Respondents were asked to identify the 5 most important E-procurement barriers and then rank them from 5 (most important) to 1 (least important). A summary of the results is displayed in Table 6.4 below,

**Table 6. 4-Top 5 Most important E-procurement barriers**

| E-procurement barriers | Focus | Mean | Standard Deviation |
|---|---|---|---|
| Inadequate infrastructure of business partners | Technical | 3.90 | 0.994 |
| Company culture | Internal organisation | 3.83 | 1.060 |
| Lack of integration with business partners | Technical | 3.80 | 0.810 |
| Lack of base infrastructure to collect data | Technical | 3.80 | 0.855 |
| E-procurement software immaturity | Technical | 3.79 | 0.849 |

Technical issues dominated the barriers. Infrastructure of business partners, integration, base infrastructure, and immaturity of E-procurement software all point to massive uncertainty in the technical elements of E-procurement. In sum, internal organisational issues were not rated as highly as the technical issues, save for company culture.

Other E-procurement barriers that respondents considered important included:

- Security
- Upper management support
- Inadequate business processes to support E-procurement

- Regulatory and legal controls

- Implementation, training and indirect costs

The findings of the sample data support the hypothesis, therefore -

**H4 is accepted**

## 6.4.7 RQ3. What are the key success strategic sourcing factors in CBZ Bank?

*H5:     Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practice*

Respondents were asked to identify the 5 most important key success factors of strategic sourcing and then rank them from 5 (most important) to 1 (least important). A summary of the results is displayed in Table 6.5. Internal change management and visibility issues dominated the key success factors to Strategic Sourcing.

Results from the questionnaire revealed the following as per Table 6.5 below,

**Table 6. 5- Top 5 Key Success Factors of Strategic Sourcing**

| E-procurement barriers | Mean | Standard Deviation |
|---|---|---|
| Visionary Leadership in strategic sourcing planning | 4.58 | 0.596 |
| Linking sourcing strategy to corporate strategy | 4.49 | 0.539 |
| System improvement | 4.04 | 0.801 |
| Top management emphasize procurement's strategic role | 4.04 | 0.999 |
| Procurement management has high visibility with EXCO | 4.00 | 1.069 |

Other key success factors for Strategic Sourcing that respondents considered important included:

- People management

- Process improvement

- Joint problem solving with suppliers

- Procurement is viewed as equal to other functions in the organisation

- Learning organisation

Issues pertaining to the buyer-supplier relationships and coordination of procurement with other functions were lowly rated (mean statistics as low as 2.26), which could create challenges for internal relationships and information and development of key suppliers. The findings based on the data of the sample support the hypothesis, therefore -

**H5 is accepted**

### 6.4.8  RQ4. What are the E-procurement success factors in CBZ Bank?

*H6:  Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement*

Respondents were asked to identify the 5 most important key success factors of E-procurement and then rank them from 5 (most important) to 1 (least important). A summary of the results is displayed in Table 6.6.

Implementing computerized procurement rules, analyzing purchasing behaviours of end users, consolidating suppliers and contracts, centralising control of contracts and involving preferred suppliers for E-procurement, dominated the key success factors for E-procurement. Thus H8 is not accepted for this sample, save for the spend analysis which is one of the top five key success factors of E-procurement in this sample. Reduction in suppliers was rated low at a mean statistic of 3.26. Results from the questionnaire revealed the following, depicted in Table 6.6 below:

**Table 6. 6- Top 5 Key Success Factors of E-procurement**

| E-procurement key success Factors | Mean | Standard Deviation |
|---|---|---|
| Implement computerized procurement rules | 4.11 | 1.144 |
| Analyse purchasing behaviours of end users | 3.94 | 2.804 |
| Consolidate  suppliers and contracts, | 3.91 | 1.023 |
| Centralise  control of contracts | 3.80 | 0.960 |
| Involve preferred suppliers for E-procurement | 3.75 | 1.111 |

Other key success factors for E-procurement that respondents considered important included:

- Strategic importance of procurement

- Enforce on-contract buying

- Understand supplier technology

- Re-engineering affected business application

- Select e-proc software after presenting a solid business case

The approximate chi-square for the Bartlett's test of sphericity for the E-procurement success factors was 606.995 with 66 degrees of freedom (d.f.) The Bartlett test

indicated that non-zero correlations existed at the significance level of 0.000 for the E-procurement success factors, thus establishing their statistical validity. Findings based on the data of this sample support the hypothesis, therefore -

**H6 is accepted**

**6.4.9 RQ5. What are the perceived benefits/transformation resulting from E-procurement initiatives in CBZ Bank?**

*H7: Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement*

Respondents were asked to indicate the impact of E-procurement initiatives on strategic sourcing processes in CBZ Bank, ranking them from 1 (very low), 2 (low), 3 (moderate), 4 (high), 5 (very high). A summary of the results is displayed in Table 6.7 below. Results from the questionnaire revealed the following:

**Table 6. 7-Top 5 Benefits/transformations of uptake of E-procurement**

| E-procurement key success Factors | Mean | Standard Deviation |
|---|---|---|
| Strategic positioning of procurement, | 3.76 | 1.045 |
| Efficiency of procurement procedures, | 3.70 | 1.253 |
| Changes to technological infrastructure, | 3.68 | 1.088 |
| Staff development and training | 3.54 | 1.299 |
| Supplier sourcing | 3.46 | 1.103 |

Strategic positioning of procurement, efficiency of procurement procedures, changes to technological infrastructure, staff development and training, and supplier sourcing dominated the perceived benefits/transformation of uptake of E-procurement.

Other benefits/transformations that respondents considered important included:

- Inter organisational information management

- Supply chain integration

- Level of outsourcing enhancement

- Reduction in employee overhead

- Option to lease capital assets

The findings based on the data of this sample support the hypothesis, therefore -

**H7 is accepted.**

*H8:    CBZ Bank is ready for uptake of E-procurement*

Respondents were asked to rate the readiness of CBZ Bank for E-procurements. The findings, as per Table 6.8 below, show the majority of respondents were neutral in their rating 43.3%, followed by respondents who agreed at 40.0%.  Respondents who strongly agreed were at 10.0%.

**Table 6. 8 -Is CBZ Bank ready for e-procurement?**

is CBZ ready for e-proc
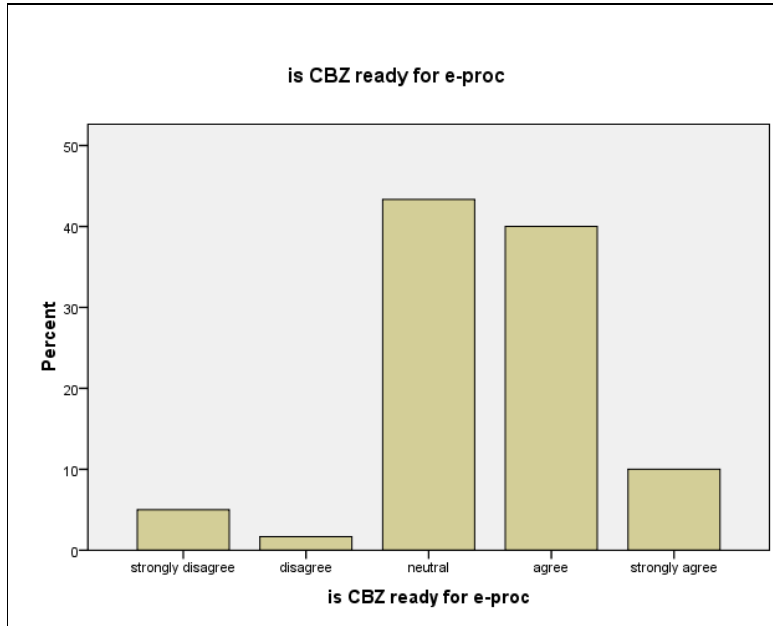
Based on the survey sample data the hypothesis -

**H8 is rejected.**

Table 6.9 below, shows the summary of results of the Hypotheses Tests .

**Table 6. 9-Summary of Hypotheses Test Results**

| Hypotheses | Result |
|---|---|
| **H1-** *Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites* | **H1 is accepted.** |
| **H2-** *Use of internet-based technologies is positively related towards enablement of E-procurement.* | **H2 is accepted** |
| **H3-** *Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement.* | **H3 is rejected** |
| **H4-** *Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement.* | **H4 is accepted** |
| **H5-** *Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practice.* | **H5 is accepted** |
| **H6-** *Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement.* | **H6 is accepted** |
| **H7-** *Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement.* | **H7 is accepted.** |
| **H8-** *CBZ Bank is ready for uptake of E-procurement* | **H8 is rejected.** |

## 6.5    Summary

In summary, this chapter presents the results and findings to the research questions. The responses to the questionnaire were analysed statistically, to test the hypothesized relationships.    This chapter presents information, interprets and analyses the data that was collected through, questionnaires, interviews, unstructured interviews and secondary data. The presentation and the findings give way to the discussion policy conclusions and recommendations in the subsequent chapter.    The results obtained from this dissertation are compared to those of earlier research studies in Chapter 7. The objective is to identify the similarities and differences with earlier studies and provide generalisable conclusions where possible.

# CHAPTER 7: DISCUSSION,CONCLUSIONS AND RECOMMENDATIONS

## 7.1　Introduction

This chapter sets the actual tone of the study as it establishes whether the data collected addressed the objectives and answered the research questions raised at the beginning of the study. This chapter also concludes the study, gives recommendations to be adopted for the success of E-procurement on Strategic Sourcing and areas required for further research.

The findings that were presented were in relation to the research questions, which were:

**RQ1. What are the current uses of internet-based technologies in CBZ Bank?**

**RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?**

**RQ3. What are the key success strategic sourcing factors in CBZ Bank?**

**RQ4. What are the E-procurement success factors in CBZ Bank?**

**RQ5. What are the perceived benefits/transformations resulting from e-procurement initiatives in CBZ Bank?**

## 7.2　Discussion of Results

### 7.2.1　RQ1. What are the current uses of internet-based technologies in CBZ Bank?

**H1:** *Use of internet-based technologies is dominated by e-mail, search for suppliers and visiting supplier's web sites*

**H2:** *Use of internet-based technologies is positively related towards enablement of E-procurement*

H1 and H2 were accepted. It is possible that the use of basic, single-process e-procurement applications is more prevalent in the sample overall than the use of integrative tools because the former are easily employed, require minimal financial investment, and involve little risk. Visiting suppliers' web sites, accessing on-line catalogs, placing orders on suppliers' web sites, and searching for low-cost suppliers are all simple tools organisations can use to get started with e-procurement. Pearcy,Parker and Giunipero (2004) research study on US-Based organisations supports these findings.

Current E-procurement products have less functionality than traditional purchasing products or purchasing modules of ERP systems. Some users are turned off by this and are hesitant to use the E-procurement products. This is because E-procurement products are still in the early stage of their evolution and the functionality will continue to improve. Current E-procurement products mainly support non-coded/non-stock MRO materials only. Although stock MRO material purchasing is possible through extensive back-end integration, most companies are sticking to non-coded/non-stock items such as supplies (paper, pencil, furniture, etcetera).

The findings show a trend towards uptake of e-procurement as a result of the use of various e-procurement applications such as the internet, intranet, visiting supplier websites. The survey shows propensity by CBZ Bank towards e-procurement uptake, as it is engaged in information-intensive activities and thus are more likely to accept new technological innovations, thus supporting research studies by Motiwalla *et al.* (2005); Yap (1990); Min and Galle (2003).

Internet-based procurement technologies are fundamentally changing the way procurement buys both its MRO goods and direct goods. Automated exchanging of data between suppliers and buyers is accomplished with these technologies, resulting in tighter relationships between suppliers and buyers. Fewer errors and higher data quality are filled into back-end ERP systems as procurement technologies get integrated with ERP and other back-end systems.

### 7.2.2 RQ2. What are the E-procurement drivers and barriers that impact CBZ Bank?

**H3:** *Price reduction, improved market intelligence and market share are the major drivers to uptake of E-procurement*

**H4:** *Lack of upper management support, inadequate IT infrastructure and company culture are the major barriers to uptake of E-procurement*

The results indicated that the main E-procurement drivers were cost related and tactical in nature. This is possibly due to the maturity of the E-procurement solutions which are yet to be implemented within the bank. Companies in the initial stages of

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E-procurement would tend to identify drivers that are cost related, as they are easier to measure and quicker to realise. More strategic drivers, although rated highly, are more difficult to quantify. These would include benefits in the areas such as:

- Improve effectiveness

- Better market intelligence

- Enhanced decision making

H3 was rejected. The drivers that were ranked the lowest (reduction in number of suppliers, improved visibility of supply chain management) were closely related to the supply chain. This would be expected, as analysts predict that some of the major benefits with E-procurement would be attained in relation to indirect procurement. This may be due to the E-procurement maturity level (investigative stage) of the organisation in this sample.

H4 was accepted. The main barriers to the uptake of E-procurement were listed as being infrastructure, technology and integration-based. This seems to indicate that the complex technological issues - both within and between organisations in the procurement process - are crucial. The ratings of cost issues, upper management support and inadequate E-procurement solutions would indicate that the bank is willing to pursue E-procurement solutions, but they are often hindered by external factors, business partners and lack of skilled personnel. However, this may also be an indication of the E-procurement maturity (investigative stage) of the sample. This is certainly an area for further research. These particular findings seem to support the acceptance of H4 especially on the technical issues and company culture.

A further question that should be posed is whether barriers gain or lessen in importance, depending on the maturity of the E-procurement implementation solution? It seems companies such CBZ Bank, who are at the stage of investigating E-procurement solutions are more likely to place greater emphasis on technological issues, rather than considering "soft" barriers, such as:· company culture,· business processes, and· cooperation of business partners.

With reference to all the above findings, H4 is accepted with regards to level of acceptance of new technological innovations being affected by the E-procurement maturity level of the organisation. This suggests that as organisations evolve toward a more strategic view of E-procurement and implementations broaden in reach and deepen in scope there are increasing challenges associated with integrating different systems and applications efficiently throughout the organisation (Mendoza, Pérez,& Grimán, *et al.* 2006). Further, implementations are now deeper in terms of functionality thereby impacting a greater range of business processes and associated procurement practices across organisational boundaries. These changes are creating challenges in aligning organisational culture with new E-procurement practices.

### 7.2.3  RQ3. What are the key success strategic sourcing factors in CBZ Bank?

*H5:   Status of the procurement function and visionary leadership are the most important key success factors for improved strategic sourcing practice*

Visionary leadership, continuous improvement and status of the procurement function were considered the most important key success factors of strategic sourcing. H5 was thus accepted.

The importance of giving individual and unit spending visibility is reconfirmed by this study and reinforces the recommendations from the literature. Having macro and micro visibility in procurement transactions enables the firm to create audit trails in the system, understand spending patterns, maximize buying leverage, undertake informed sourcing decisions, pursue contract compliance, and optimize budgeting and planning (Bushell, 2004) (Croom, 2000).

Internally, leadership in strategic sourcing planning, system improvement, top management's emphasis of procurement's strategic role were the most important factors for successfully implementing strategic sourcing. Issues pertaining to the buyer-supplier relationships and coordination of procurement with other functions were lowly rated (mean statistics as low as 2.26), which could create challenges for internal relationships and information and development of key suppliers. Earlier studies on strategic sourcing appear to emphasise dynamics of the buyer-supplier relationships. Strategic sourcing literature, on the other hand, focus on issues pertaining to the structure and organisation of the procurement function itself.

For successful implementation of E-procurement, procurement as a function should be provided with tools that support continuous input to an organisation's strategic sourcing decision making processes, as well as manage key relationships with suppliers. To enhance the impact of e-procurement on strategic sourcing members

for the procurement function should be routinely included in cross-functional teams, in order to access information on change in supply markets. The findings show that strategic sourcing has a major impact on both internal procurement operations and the organisation's relationship with suppliers.

To be truly successful, both E-procurement and strategic sourcing require the kind of ongoing care and feeding that can only be provided by dedicated individuals with clearly defined roles and responsibilities. Many procurement organisations display a "one-shot deal" mentality when it comes to strategic sourcing. The successful companies have established the infrastructure to enable effective sourcing. That infrastructure is built not just on technology but also on a permanent, experienced organisation working within a common sourcing framework.

### 7.2.4   RQ4. What are the E-procurement success factors in CBZ Bank?

*H6:   Reduction in number of suppliers, spend analysis and strategic importance of E-procurement are the most important key success factors of E-procurement*

This study's objective was to establish the impact of E-procurement on strategic sourcing. There has been relatively little research on this issue and the conclusions of this study are expected to provide a useful extension to earlier studies.

Implementing computerized procurement rules, analyzing purchasing behaviours of end users, consolidating suppliers and contracts, centralising control of contracts

and involving preferred suppliers for E-procurement, dominated the key success factors for E-procurement. Thus H6 was not accepted for this sample, save for the spend analysis which is one of the top five key success factors of E-procurement in this sample. Reduction in suppliers was rated low at a mean statistic of 3.26.

Respondents rated E-procurement as a strategically important key success factor. This finding is consistent with other studies that point to the increasingly strategic role of E-procurement (Laub, 2001) (Knudsen, 2002). E-procurement has gained a more strategic position in organisations. This finding supports the earlier observation that E-procurement has increased in scope, spanning the whole of enterprise and is more integrated with other functions. As E-procurement has become a more strategic activity within organisations the role of the procurement professional also appears to be changing. This is seen in the greater requirement for staff development and training to enhance business analysis skills in areas such as strategic sourcing and supplier analysis.

It is also essential to bring key stakeholders on board early in the process, involving them from the very beginning. If the stakeholders are not behind the effort, users might not use the system, continuing to use existing legacy methods for procurement instead. Organisations should manage the expectations of the users and stakeholders by telling them the truth. It is necessary to segment and choose the vendor for each procurement strategy separately. This is supported by previous studies done by Rajkumar (2001).

### 7.2.5 RQ5. What are the perceived benefits/transformations resulting from E-procurement initiatives in CBZ Bank?

**H7: *Changes in technological infrastructure, efficiency of procurement procedures and staff development are the main perceived benefits/transformations of uptake of E-procurement***

**H8: *CBZ Bank is ready for uptake of E-procurement***

Transformations to business processes, work practices and supply-chain arrangements may occur as a consequence of the adoption of E-procurement. Respondents were asked to rate the perceived impact of E-procurement on their organisation. Strategic positioning of procurement, efficiency of procurement procedures, changes to technological infrastructure, staff development and training, and supplier sourcing dominated the perceived benefits/transformation of uptake of E-procurement in this sample.

Previous literature has shown an increase in: staff cost by approximately 33%; staff *development & training needs* by approximately 33%; an increase in efficiency of procurement procedures; strategic *positioning of procurement*; and changes *to technological infrastructure*. Increases in most of the costs may also be a consequence of the changing role of the procurement professional and the more strategic positioning of procurement within the organisation, and the requirement for practitioners with enhanced business analysis skills for strategic sourcing  and supplier analysis.

This supports the earlier finding relating to E-procurement activities. The focus at this initial stage for the majority of companies has been on implementing and automating the purchasing activities themselves. The benefits of E-procurement still remain largely unrealised by most organisations embarking on E-procurement implementation. A number of the organisations that have implemented E-procurement identified a reduction in employee overhead as a marginal benefit. However they also indicate that staff training and development needs have significantly increased. Further, research has shown a shortage of sufficiently skilled staff as inhibiting to E-procurement adoption. This is consistent with the heightened strategic importance of E-procurement, which may require different skill sets. Although achieving cost and operating efficiencies are important, the main value added benefit of E-procurement may be derived from better information for strategic decisions and governance practices, which do not at this stage have much visibility. This requires further investigation.

Companies both big and small can now reap the benefits of E-procurement technologies by automating the procurement operations such as catalog search, supplier selection, and purchase order processing. These activities can be done by end-users, while ensuring that corporate procurement policies are being enforced. The implementation of E-procurement systems is not without problems. Current systems do not include all the functionality required by users. For example, the level of integration with back-end systems provided varies. A strategy that many organisations follow in their E-procurement process is to use a consulting company to help them start out with a pilot implementation on about 5 to 10 percent of their MRO items, within a single business unit. As lessons from the pilot implementation

are absorbed and experience is gained, the E-procurement technology is rolled out gradually to other business units and expanded into other MRO items.

Early adaptors of E-procurement have reported lower costs of goods and services purchased, lower inventory levels, shorter lead-times, and improved communications with suppliers. The savings generated through the application of E-procurement was 25.0% at Fleet Bank, 22.0% at Compaq, 20.0% at IBM, and 18.0% at DuPont. Within the service industry, cost savings are also the motivation for America West Airlines. The $2 billion carrier was losing money even before the September 11 attacks of 2001. To cut costs, the company has invested heavily in E-procurement. Electronic ordering appears to be the trend for the future. With all the benefits that Web-based procurement offers, it would seem that eventually every industry would turn to it. The reduction of paperwork, fewer errors, more accurate information, better inventory management, and quicker delivery times point to the fact that it's just a matter of time before every company is employing this technology. The technology gives companies an opportunity to gain a competitive advantage no matter what their size.

The requirements for E-procurement, however, differ between branches and Head Office unit in CBZ Bank supporting findings that E-procurement depends on type of operations (Gosain *et al.*, 2005) (Lancioni *et al.,* 2000). Organisational readiness impacts on e-business strategy (Mehrtens *et al.,* 2001a) and in particular E-procurement strategy. The following quote was captured in a case study, which supports the view that lack of readiness has been attributed mainly to human readiness (Osmonbekov *et al.,* 2002): "There are not enough professional staff

specialised in this field. Furthermore, in order to implement an E-procurement strategy in the future, more information and expertise would be necessary".

CBZ Bank may benefit from being a "conservative adopter" (Davila and Palmer, 2003a), but adopting a "Wait and see" approach (Gottschalk and Abrahamsen, 2002) (Davila *et al.*, 2003) compromises their position as the leading local bank by not responding to  dynamic E-procurement global trends. The results of the survey show a cautious approach and hesitation in regard to implementation of E-procurement within the organisation, probably because the technologies for internet-based procurement systems are still in the emerging or developmental stage, lack of exposure to E-procurement applications, lack of technological readiness on the part of their suppliers, supplier participation and influence ,external organisational pressures, lack of   internal organisational support especially from upper management, network connectivity/integration, lack of perceived task improvements/convenience and lack of legislation (Mehrtens *et al.,* 2001b) (Cox *et al.,* 2001) (Power and Singh, 2007) (Cagliano *et al.,* 2005) (Croom, 2005) (Mclvor and Humphreys, 2004) (Porter, 2001) (Graham and Hardaker, 2000) ( Joo and Kim, 2004) (Dooley and Purchase, 2006) (Rajkumar, 2001) (Tavi, 2008).

Given today's recession concerns, it is important for companies of all types and sizes to understand where they are spending money and uncover opportunities for cost savings and efficiencies.  Best-in-class practices are emerging globally that take advantage of third-generation E-procurement solutions and deliver a whole new level of savings, control and continuous improvement.   Businesses can actually understand how their actual spend being invoiced compares to their procurement

plan. Therefore spend analysis can be part of daily operations ensuring that a company is fiscally prudent and spending according to its value as supported by Mitchell(2004).

Organisations such as CBZ Bank should aggressively implement strategic organisational change management to ensure successful uptake of e-procurement to remain relevant in the banking sector.

## 7.3    Conclusions

***How does adoption of E-procurement impact strategic sourcing in CBZ Bank?***

Companies both big and small can now reap the benefits of E-procurement technologies by automating the purchasing operations such as catalog search, supplier selection, and purchase order processing. These activities can be done by end-users, while ensuring that corporate purchasing policies are being enforced.

Much research has been conducted in the public services sector and this research contributes to the small but growing number of studies of E-procurement in the context of the services industry in particular the banking industry, by studying E-procurement in CBZ Bank, Zimbabwe.

This research had several limitations. The limited number of respondents to the survey prevented more advanced quantitative analysis. The case study would have benefited from more interviewees. The study was also restricted to a commercial bank in a developing country in Africa, which may limit generalisability. However, the findings may have salience in the public, not-for-profit and voluntary sectors, where

procurement is increasingly used as a lever to achieve social and economic reform, and in private sector firms keen to demonstrate corporate social responsibility. This study may also have broader relevance for other complex international networks such as multinational corporations, which are large, geographically dispersed, goal disparate inter-organisational networks (Ghoshal and Bartlett, 1990).

In spite of the constraints, interesting findings and observations were made and the following conclusion made:

E-procurement involves efforts to change how procurement functions, such as spending and budgets, employing staff, buying goods and services, and managing technological and organisational activity. It also has the potential to transform the relations between suppliers and customers. However, while E-procurement is a label used globally, inscribed within its design may be a number of different assumptions and requirements relating to for example, technology, objectives, information, staffing and skills and institutional contexts. Therefore, its implementation may not be as simple as taking a design from one context into another one.

The lack of uptake of E-procurement by CBZ Bank is surprising, especially given that the particular ERP system used by the bank incorporates specific functionality to support E-procurement. One would therefore expect that the use of an ERP system would overcome many of the technological and integration barriers associated with E-procurement as shown in the sample. Alongside this are the identifiable and quantifiable benefits to support the introduction of an E-procurement solution. A fundamental barrier may be the lack of technically skilled personnel within the organisation. Research indicates that the majority of "e-projects" are retarded due to

this lack of skilled personnel (Stuart, 1999). However, the strength of the identified barriers and drivers could be dependent on the maturity of CBZ Bank in regard to their E-procurement solution.

Future research should endeavour to categorise the E-procurement maturity of organisations in developing countries in  an attempt to identify if there is a transitional nature to drivers and barriers. Further analysis should also occur with barriers and drivers being cross-tabulated by world region, industry sector, company size and procurement expenditure. Interestingly, the difference between an e-business strategy and a typical corporate business strategy is that for an e-business strategy to be successful, it is often dependent on the actions of other companies (NOIE, 2000a).

This study identified ,the use of internet based technologies, a number of barriers and drivers for E-procurement, key success factors of strategic sourcing and E-procurement and readiness of the company for E-procurement uptake and assessed the strength of these factors within a commercial bank in Zimbabwe. It sets the stage for a wider program of research on E-procurement in the Zimbabwean marketplace.

Whilst developing countries like Zimbabwe might benefit from e-commerce, doubt has been raised over whether they are ready to participate in e-commerce, have the kinds of industries that act as demand-pull, and whether social, political and institutional arrangements are in place to encourage and sustain e-commerce (Lund and McGuire, 2005). Much research on E-procurement has been conducted in the private sector (Tatsis *et al.,* 2006). What may be good practice in a profit-making firm

may be viewed as in conflict with broader policy objectives of not-for-profit and public sector organisations.

In developed countries, maturity levels may be evident in the gap between SMEs and larger suppliers in E-procurement adoption (ISM/Forrester Research, 2003). E-procurement adoption may limit the supply base, and contribute to the maturity level of an organisation. By implementing E-procurement, large organisations such as CBZ Bank should not limit access and penalise small to medium suppliers within the marketplace.

As a result of this study it is anticipated by the researcher that CBZ Bank will see their role as assisting in developing economies, legislation, education, partnerships with private business and good governance.

## 7.4   Recommendations

The following recommendations are not exhaustive:

### 7.4.1  Recommendations to CBZ Bank within 1 year

- Formulate and implement an e-business strategy in alignment with the corporate strategy
- Formulate and implement an E-procurement strategy in alignment with the corporate strategy
- Redefine supplier relationships towards E-procurement implementation
- Re-engineer business and procurement processes to compliment e-procurement applications

- Utilise a consulting company to help them start out with a pilot implementation within a single business unit.

- Apply  a phased approach to implementation of e-procurement as per Yen and Ng (2003) study

- The total cost of ownership and the service and support provided by the vendor must be considered during the implementation

- To make this technology successful, managers must plan and lay technology groundwork. They must believe in the benefits of this technology, opt for a comprehensive approach, define new relationships with vendors, train and support suppliers, and openly communicate with employees

- Consider leasing capital assets


### 7.4.2  Recommendations to CBZ Holdings within 3 years

- Consolidate the E-procurement system to include all the subsidiary companies

- Enforce upper management support for E-procurement

- Merge the corporate strategy with the e-strategy and e-procurement strategy for each subsidiary to enhance competitive advantage and sharpen core competencies


### 7.4.3  Recommendations for Future Research

Additional study areas for future research include:

- The extent to which the maturity of an organisation affects uptake of E-procurement

- The effect of country geographical location on uptake of E-procurement

- The impact of E-procurement on buyer-supplier relationships in a developing country context

- The influence of overseas trends in E-procurement on Zimbabwean organisations

- Leasing as a form of strategic sourcing in Africa

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## APPENDICES

**Appendix 1: Consent Form (see attachment)**

**Appendix 2: Survey Instrument (see attachment)**

**Appendix 3: Interview Questions (see attachment)**

**Appendix 4: Demographics Statistical Analyses (see attachment)**

**Appendix 5:  Research Question 1 Statistical Analysis (see attachment**)

## Appendix 6: Research Report Procedures and Time Frame

**Table 5. 6-Important Dates for Research Report MBL3Procedure and Timeline**

| IMPORTANT DATES FOR RESEARCH REPORT MBL3 | |
|---|---|
| **31 Jan 2009** | Submit research topic on MBL 3 Research Data Base under "title" |
| **31 Mar 2009** | Submit electronic copy of research proposal (20-50 pages, written in future tense) on research data base under "proposal" |
| **1 June 2009** | Submit interim research report (chapter format, written in present or past tense) on research data base under "interim" |
| **22 Sept 2009** | Submit draft report on research data base under "draft". VERY IMPORTANT DATE |
| **1 Dec 2009** | Submit final report for examination – DELIVER TWO SPIRAL (PLASTIC) BINDED COPIES plus TWO COPIES OF THE ARTICLE TO THE OFFICE OF THE MBL 3 PROGRAMME ADMINISTRATOR |

**Table 5. 7-MBL Research Report Completion Process**

| Task to complete | Estimated amount of time needed | Proposed Target date of completion | Task completed |
|---|---|---|---|
| **Submission of topic** | 1 week | 31 January 2009 | **01 Feb 2009** |
| **Submission of proposal** | 2 months | 31 March 2009 | **April 2009** |
| **Design of a research plan** | 2 months | 1 June 2009 | **June 2009** |
| **Gaining access to data** | 4 weeks | July 2009 | **August 2009** |
| **Literature review** | 3 weeks | July 2009 | **August 2009** |
| **Set up selection criteria** | 1 week | August 2009 | **August 2009** |
| **Design and test questionnaire** | 2 weeks | June 2009 | **July 2009** |

| | | | |
|---|---|---|---|
| **Design final questionnaire** | 1 week | July 2009 | **July 2009** |
| **Interviews and posting questionnaires** | 2 weeks | August 2009 | **Sept 2009** |
| **Editing, grouping completed questionnaires** | 1 week | August 2009 | **Sept 2009** |
| **Data entry and coding** | 1 week | August 2009 | **Sept 2009** |
| **Design and testing computer program** | 1 week | September 2009 | **Sept 2009** |
| **Data analysis** | 1 week | September 2009 | **Sept 2009** |
| **Report findings** | 1 week | September 2009 | **Sept 2009** |
| **Present draft research product** | 1 week | September 2009 | **October 2009** |
| **Present final research product** | 4 weeks | November 2009 | **Dec 2009** |