THE CRITICAL SUCCESS FACTORS OF E-PROCUREMENT ADOPTION

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ABSTRACT

E-Procurement is electronic used system for making the purchases through online by a single click. Some of the companies all over the world implement E-Procurement and succeed while some companies was failed. There are two main objectives of this research study; To identity the critical success factors influencing the success of E-Procurement and at the same time to establish the challenges that face E-Procurement adoption in Top Glove Sdn. Bhd. With the rapid changes in dynamic society, organizations must adopt and adapt with the new paperless procurement process to be on par with the competitors. This research is a qualitative research study and it involves interview session with expert and experience staffs particularly from a manufacturing industry which produces its own products. Information and data are some first and secondary data which were collected and compiled from the particular organization. At the end of the research, it is indeed the embracing of new procurement process has increased the performance of procurement in the industry. Organizations are able to minimize cost, supply chain players, on the other hand, are able to share information at real time to avoid future production line down which will cost much on the changeover. The longer the changeover duration in production line, the higher the loss to the organization. In addition, the paperless way of work flow will reduce bureaucracy which means it will result in less time consumption. In a nutshell, the adoption of E-Procurement in manufacturing industry will exert higher procurement performance. Managers, buyers, planners, schedulers, suppliers, and master planners are able to foster stronger bond and understanding to achieve the common ultimate goals and aims.

Keywords: E-procurement, Online procurement, E-Procurement in manufacturing industry, Traditional purchasing, Critical Success Factors of E-Procurement

ABSTRAK

E-Perolehan adalah sistem elektronik yang digunakan untuk membuat pembelian melalui talian internet. Beberapa syarikat di seluruh dunia teleh melaksanakan E-Perolehan dan ada antaranya berjaya manakala ada beberapa syarikat yang telah gagal melalui perlaksanaan ini. Terdapat dua objektif utama kajian penyelidikan ini; Untuk mengetahui faktor kejayaan kritikal yang mempengaruhi kejayaan E-Perolehan dan pada masa yang sama untuk mengetahui cabaran yang dihadapi melalui penggunaan E-Perolehan di syarikat Top Glove Sdn. Bhd. Dalam masyarakat yang dinamik, organisasi hendaklah melaksanakan dan menyesuaikan diri dengan proses perolehan tanpa penggunaan kertas. Kajian ini merupakan satu kajian penyelidikan kualitatif dan melibatkan sesi temu bual dengan pakar dan staf yang berpengalaman terutama daripada industri pembuatan Top Glove Sdn. Bhd yang menghasilkan produk sendiri. Maklumat dan data daripada beberapa data utama dan kedua telah dikumpul dan disusun daripada organisasi tersebut. Pada akhir kajian, dapat disimpulkan bahawa memang perlu melaksanakan proses E-Perolehan yang boleh meningkatkan prestasi industri. Melalui perlaksanaan ini, organisasi dapat mengurangkan kos, pemain-pemain dalam rantaian bekalan, boleh berkongsi maklumat pada masa yang tepat untuk mengelakkan kos-kos yang merugikan keuntungan organisasi. Di samping itu, perniagaan tanpa kertas dalam aliran kerja akan mengurangkan birokrasi yang akan menyebabkan kurang penggunaan masa. Kesimpulannya, penggunaan E-Perolehan dalam industri pembuatan akan memberi prestasi perolehan yang lebih tinggi. Pengurus, pembeli, perancang, penjadual dan pembekal dapat memupuk ikatan dan pemahaman yang lebih kukuh untuk mencapai matlamat.

Kata Kunci: E-Perolehan, Perolehan Online, E-Perolehan dalam Industri Pembuatan, Pembelian Tradisional, Faktor Kejayaan Kritikal dalam E-Perolehan

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ABBREVIATIONS

NO.	ABBREVIATION	PHRASE
1	B2B	BUSINESS-TO-BUSINESS
2	B2C	BUSINESS-TO-COMMERCE
3	CM	COMMODITY MANAGEMENT
4	CSCM	COLLABORATIVE SUPPLY CHAIN MANAGEMENT
5	ERP	ENTERPRISE RESOURCE PLANNING
6	MRP	MATERIAL REQUIREMENTS PLANNING
7	OEM	ORIGINAL EQUIPMENT MANUFACTURER
8	PO	PURCHASING ORDER
9	SCM	SUPPLY CHAIN MANAGEMENT
10	WIP	WORK IN PROCESS
11	E-Mail	ELECTRONIC MAIL
12	E-Procurement	ELECTRONIC PROCUREMENT
13	IT	INFORMATION TECHNOLOGY

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Most of the companies nowadays can be seen as being composed of three primary processes which are purchasing, manufacturing and distribution based on the overall flow of materials (Thawiwinyu and Laptened, 2009). So, in order for the companies to remain competitive in the market, it's must reduce the costs of their components or parts and materials by sourcing from cost saving suppliers. Nowadays most of the organizations are increasingly doing E-Business using information and communication technologies and the additional use of internet too. The traditional procurement which is lowly, back-end process has been transformed into E-Procurement with the emerging technologies that make everything possible and within reach. Furthermore, with increasing on competitive pressures, supply chain management professionals must continually find solution to reduce costs, increase efficiency, and also to reduce the longest lead time. Procurement now is seen as a core player in supply chain focus on time to market, product quality based competition, cost efficiency, inventory management, and customer uncertainty.

According to Monczla and Morgan (2000), this can be solved by the key competitive priorities for the 21st century is the maximization of Internet-based technologies such as E-Procurement. In 1990's along with rapid growth of the Internet, Electronic Commerce (EC) in traditional market was founded. Before E-Procurement

implementation, buyers or purchasers were have to force to handle errors in ordering, costing and invoicing which often is very time consuming and to trace also very costly in traditional procurement previously.

Besides that, according to Nelson *et. al.* (2001), most of the organization spending its costs in purchasing activities. Thus, in order to reduce the total costs spends on purchasing activities, internet technologies are used and E-Procurement has become popular to implement in the latest era by both government and private sectors. E-procurement is actually the use of electronic technologies to streamline and enable the procurement activities and an organization which includes electronic ordering, electronic mail between suppliers and buyers, internet sourcing via the third party, and research in supplier markets. Besides that, Zsidisin (2007) defined E-Procurement as the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services. According to Brown (2005), the use of Information Communication Technologies (ICTs) has dramatically changed services, business models, and people's expectations of the quality and efficiency of information sharing and service delivery.

An Aberdeen report (Minahan and Degan, 2001) divides E-procurement technologies into two categories, namely Indirect Procurement which this includes the procurement of non-production goods and services such as office supplies, printing, advertising and casual labour. Direct Procurement which this includes the procurement of raw materials, parts and assemblies (in example, organization and management of raw materials, parts and assemblies) and sourcing which is identification, evaluation, negotiation of products and supplies for both the indirect and direct supply chain.

This research is about the critical success factors of E-Procurement adoption in Top Glove Sdn. Bhd. Which is using the E-Procurement in their daily purchasing task that will help have collaboration with other supply chain players.

1.2 Problem Statement

In the modern competitive business environment, organizations need to implement information communications technology in order to remain competitive in market with other industries. The overall success of any E-Procurement application will depend on a variety of factors. Some organizations implement E-Procurement technologies and they succeed whereas others failed too due to other factors. This diverse nature of the outcomes in adoption of E-Procurement systems has attracted a number of researchers who want to understand the reasons for this diversity.

The research on the critical success factors of E-Procurement will be done in Top Glove Sdn. Bhd. Which is located in Klang, Selangor. The plant at Klang, Selangor is where the purchasing team being house and the question is how Top Glove utilized the E-Procurement from time to time. In 1991, Top Glove started to run with one factory only with few staffs. But currently there are 29 factories running and it needs more systematic system in order to run the business smoothly. The traditional purchasing process is too manual and contributes to high time consumption for day-to-day task with few staffs. Without the adoption on internet, many supply chain players are not being included in the purchasing chain and this caused many problems in miscommunication, high time consumption, involving too many papers which will slower the process of

purchasing, and many functions cannot be carried out simultaneously causing delays in achieving a desirable output.

On the other hand, practice of bureaucracy is purchasing in indeed a very slow growing process and the adoption of E-Procurement will manage to hasten the process. Many tasks wanted to be performed by a buyer will always get an approval from manager most of the time. Top Glove E-Procurement system are more to extra-net which is used internet in daily activities that links internal parties with external parties like supplier, vendor and etc. With the usage of internet in procurement, any raise form will be notified to the manager computer and he/she will be able to approve on the spot if no further problem is seen. Suppliers and other parties will have the opportunities to share the information on current demand and forecast demand with buyers and planners so that any future line down can be kept at bay. Many issues can be hindered with the adoption of E-Procurement in manufacturing industries.

Besides that, major changes are currently taking place globally within procurement functions of informal and formal business entities. As most of the organizations become increasingly involved in cost reduction projects, the impact of procurement has become evident. So, the procurement activities in an organization is shifting its focus from daily procurement activities to long term, valued adding procurement initiatives.

1.3 Research Question

This research will address the following questions:

A) What are the critical success factors in the adoption of E-Procurement in Top Glove Sdn. Bhd?

B) What challenges face E-Procurement adoption in Top Glove Sdn. Bhd?

1.4 Research Objective

Proposition of this study are to:

A) To explore the critical success factors in the adoption of E-Procurement in Top Glove Sdn. Bhd.

B) To explore the challenges that face E-Procurement adoption in Top Glove Sdn. Bhd.

1.5 Definition of Terms

Definitions of key terms have been created as follows for this study to be meaningful and be correctly interpreted by the readers.

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. From the source of IDC (1999), the transaction must involve buying and must occur over the Web. According to Turban,

Lee, King and Chung (2000), E-Procurement refers to the purchase of goods and services for organizations.

1.5.2 Direct and Indirect Procurement

Direct procurement refers to all components and raw materials that are used in the manufacturing process of making a finished good product, for example such as sheet metal, semiconductors, and petrochemicals (Laming, 1995), whereas indirect procurement refers to the 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 available source 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."

1.6 Significance of the Study

The study of critical success factors of E-Procurement in manufacturing industry is to make an impact in transforming the traditional procurement to the time-friendly E-Procurement. Manufacturing factories be it Original Equipment Manufacturer (OEM) have to adopt E-Procurement to yield a desirable impact in supply chain management. It is no denial that the cost of adopting E-Procurement is high but the results return will be much more overwhelming. Small and medium-sized companies can too considering implementing E-Procurement into daily procurement process to accomplish cost minimization objectives at the same time to reduce the time consumption that might be a biggest lost for a company. Besides that, this study really hope will contribute to numerous benefits in terms of theoretical and practical perspectives listed as below.

A. Theoretical perspective

In term of theoretical, this research would help other individual to prove the critical success factors and challenges and also support the future research, generates good ideas and also provides better understanding.

A number of researchers have conducted studies on E-Procurement. For instance Vaidya, Sajeev and Callender (2006) conducted a study on the critical factors that influence E-Procurement adoption success in the public sector. The study concluded that if E-Procurement initiatives in the public sector are to assist the development of E-Procurement across the information economy, there should be wider discussion and agreement on what constitutes the relevant critical success factors and how the achievement of success can be assessed.

Another study was carried out by Batenburg (2007) on E-Procurement adoption by European firms. It was established that there are indeed country differences with respect to E-Procurement adoption, and that firms from countries with a low uncertainty avoidance such as Germany and the UK are the early adopters of E-Procurement, while countries that are less reluctant to change such as Spain and France have lower adoption rates.

Greunen, Herselman, and Niekerk (2010) also carried out a study on the adoption of regulation-based E-Procurement in the Eastern Cape provincial administration. The study found that measurable benefits of supply chain management have not yet been realized due to general limited understanding of how supply chain management concept works within government environment.

B. Practical perspective

This study could support the management to improve further the E-Procurement system. Besides that, this E-Procurement system will make sure the smooth of operation process for all parties linked in this system in the following areas:

- Achieving its strategic goals

- Implementing and sustaining its core strategies

- Maximum utilization of Information systems in line with its business strategy

- Opportunities to extend its market share, locally and internationally

- An opportunity for procurement synergies within Top Glove Sdn. Bhd

1.7 Scope and Limitations of the study

The main limitation that faced is time constraint which is allocated duration of six months only to complete this research. Besides that, this research as a case study method that focuses on Top Glove Bhd in Klang, Selangor and limited access to company information which is not to disclose any company's confidential information. Besides that, this could have implications for other organizations such as public sector or multinational companies considering implementing E-Procurement with supplier. Besides that, this research study will show the research methodology, design and data analysis and how it will contribute to the body of the knowledge. Moreover, the population of this research study will be a random sample comprising the Top Glove Sdn. Bhd staffs whose are experts in this newest E-Procurement system implementation only. The researcher is also will use primary data and secondary data which include observations and in-dept. interviews. Furthermore, based on extensive literature review and previous empirical studies, a research framework addressing strategic as well as operational issues will be developed. The research will conclude with results, managerial implications, limitations and recommendations for now and future research.

On the other hand, this research study also does not focus on measuring performance of E-procurement adoption systems in Top Glove Sdn. Bhd because the impact of a new system is hardly evaluated in a short time of period which is less than 1 year. This research paper also does not include performance measurement and assessment of E-Procurement systems though some data on usage are provided.

1.8 Organization of the Study

This research study contains on five main chapters. The first chapter is present on the background of the research study. It will give the statement of the problem, objectives, research questions, research proposition, definitions of terms, limitation and explain the benefits gained from this research study.

The second chapter present on an empirical literature review carried out in the context on the critical success factors of implement E-Procurement. In seeking to the success of E-Procurement implementation, several critical success factors and also face challenges E-Procurement are identified in the literature.

The third chapter present on qualitative methods to identity the critical success factors of implementation E-Procurement. A formal interview session had been carried out with expert staffs who are actively involved in E-Procurement process. The researcher had selected qualitative study for this because the sample is few only and the staffs involved in this study are who are expert on this area.

The following chapter of four is present to interpret and analyze the findings to determine the linkage between aspects such as the research questions, proposition, and literature reviewed.

Last but not least the final chapter of five present about the research key issues and assesses whether the research objectives have been made or not. Recommendations will be offered, limitations of the study will be indicated and further areas of research be suggested.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, a comprehensive theoretical literature review 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, analyzed, and interpreted. Researcher had given the objective of this research study is to identify the critical success factors of implementation E-Procurement, the literature review is organized along the lines of these individual research streams. First of all, a theoretical discussion of past research study on E-Procurement implementation is reviewed and is followed b studies developed to the critical success factors in implementing E-Procurement. This chapter is provide an overview of the literature pertaining to E-Procurement and critical success factors. Besides that, this chapter is also described literature on E-Procurement and its current use and benefits.

Today companies are facing increasing market pressures due to globalization, shortened product life cycles and more sophisticated consumer tastes (Cavinato, 1992). This chapter also examines literature on E-Procurement, Critical Success Factors and challenges in adopting E-Procurement. 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.

2.2 Overview of E-Procurement implementation

What is the meaning of E-Procurement? There are several author had define the term of E-Procurement in various way. According to MacManus (2002), the terms of E-Procurement and E-Purchasing have been used synonymously in many jurisdictions in an attempt to prove their involvement in the E-Commerce revolution. Besides that, E-Procurement is the use of electronic technologies that link all the procurement activities in an organization (Hawking and Stein, 2004). While Croom and Brandon Jones (2004) defines that the E-Procurement as the use of Internet which is based on integrated information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, post and review.

Besides to define the term of E-Procurement for the purpose of this paper, researcher had also defined the term "implementation". Actually what is referring to the term of "implementation"? As this implementation related to E-Procurement, the implementation has been defined in various ways. Where a most general definition from the Information systems (IS) literature by Ginzberg (1979), mentioned that implementation is "an effort beginning with the first thought of developing a system and not ending until the project is completed or abandoned". However, Chan and Swatman (1998), were defined that Information system implementations is best delineated as a process of organizational change that widens over a considerable period of time. Besides that, more definitions of the term from the diffusion – based models of innovation adoption in relation to E-Commerce or E-Business (Srinivasan, Lilien and Rangaswamy, 2002).

Furthermore, there are theories that had propose a five stage framework of initiation, adoption, acceptance, reutilization, and infusion explaining how an IT solution refers to application too is implemented in and organizations, which, with the exception of infusion, forms the framework of this analysis as shown below (Cooper and Zmud, 1990). Referring to this Figure 2.1, infusion is the final stage at which the E-Procurement solution is the success of the organization to its full potential.

Stages	**Activities**
Initiation	Pressure to change coming from internal or external competitive treats
Adoption	Selection of the proposed solution and the decision to invest resource to facilitate the changes
Adaption	Identifying the sort coming of existing or current system
Acceptance	Minimal use of the new system
Reutilization	Realization of project resulting in a change of local practice
Infusion	Full use of the system and integration with other

Figure 2.1: Five stage Framework

Source: Cooper and Zmund (1990)

Lennon and Attaran (2002) stated that procurement is the largest expense of an organization in a cost structure. It includes activities like advertising tenders, electronic submission of tenders, electronic ordering, internet sourcing via third parties, electronic mail between buyers and sellers, electronic mail in contract management, e-marketplace applications, content applications, buy-side applications, sell-side applications, research into supplier markets, and last but not least integration of procurement within the financial and inventory systems. Minahan and Degan (2001), divides E-Procurement into two technologies which are indirect procurement includes purchase of non-production goods (office supplies, furniture) and services (labour, advertising) whereas direct procurement involves purchasing of raw materials, parts and assemblies. On the other hand, sourcing is the identification, evaluation and negotiation of products. This facilitates the so-called frictionless commerce paradigm (Brynjolfsson and Smith, 2000).
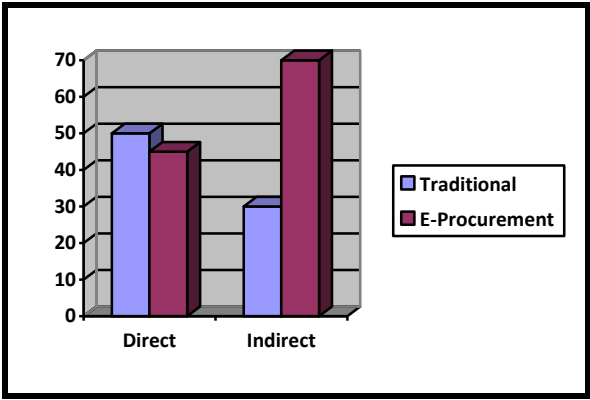
Figure 2.2: Direct and Indirect Procurement

According to Figure 2.2, it's shows that spending is more on indirect purchasing in E-Procurement. So far, indirect procurement it has not been effectively controlled or automated at most organizations, resulting in increased materials costs and significant

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maverick spending. Recently, internet-based procurement is getting widely used to improve the management and acquisition of MRO 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 internet has been widely adopted by companies with the aim of improving performances both in internal processes and in processes going beyond their boundaries (Bartezzaghi and Ronchi, 2005). Despite the fact that business-to-business (B2B) trade has enjoyed a quieter existence online than business-to-consumer (B2C) (Barratt and Rosdahl, 2002) the benefits of e-procurement in a B2B setting are significant (Min and Galle, 2003).

For the past 40 years, while in private and public sector organizations have been utilizing Information Technology (IT) systems to streamline and automate their purchasing and other processes, it is only in the past decade that E-Procurement system have attracted attention. So there are debates about how recently E-Procurement has emerged. According to research conduct by Dai and Kauffman (2001); Koorn, Smith and Mueller (2001), there is no doubt that the use of the Internet in E-Procurement provides several advantages over earlier inter- organizational tools. Thus, OGC (2002) strongly stated that it was only in the Internet – became widely enabled and provided the essential resource for the automation of procurement.

Turban et al. (2006) added that most of the corporate buyers wasted time on non-value adding activities such as data entry, rectifying errors on papers, expediting delivery, or solving quality problems. It is to believe that the use of internet-enabled

technologies can resolve the problems by minimizing time, cutting down on cost and eliminate waste. Hence, E-Procurement implementations for business or manufacturing is made possible to facilitate improved accuracy, reduced clerical work, minimize paperwork errors, reduced order-cycle time, and increased productivity. Hence, reduction or elimination of authorization stages; regulation of exceptions to a limited degree at the beginning; elimination of paper; integration of suppliers in the entire process chain; and consideration of the complete process, from searching for articles through to invoicing take place. Apart from that, many manufacturers agree that the implementation of E-Procurement increase competitiveness among other players. Min and Galle (2003), distinguished that the E-Procurement is a prerequisite in a business world as well as manufacturing industry. The more complicated the old paper-based procurement processes, the more authorization stages and exceptions, and therefore the higher the savings will be. Besides that, E-Procurement provides an opportunity to consolidate sources and control maverick buying, which can account for dramatic savings. So, this cost savings are one of the most important motivations for E-Procurement.
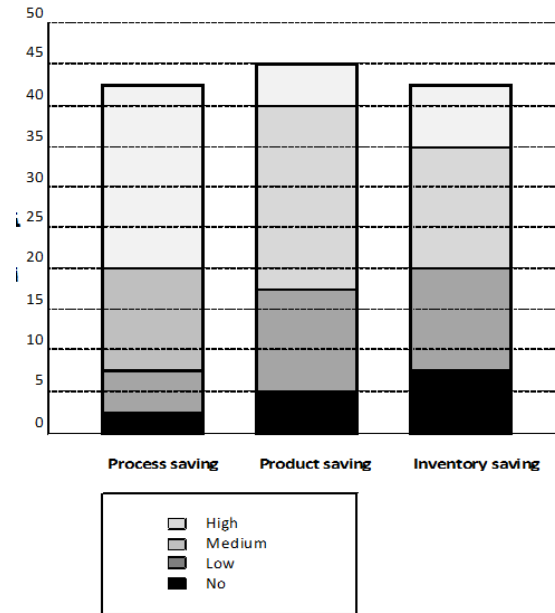
Figure 2.3: Potential Saving in E-Procurement

Based on Figure 2.3, the potential saving in procurement can be divided into three categories which is process, products and inventory savings, the latter the proactive management of key data, and higher – quality purchasing decisions within organizations. Prior to the implementation of E-Procurement, efficiency improvements are calculated on the basis of the situation. The more complicated the old paper – based procurement processes, the more authorization stages and expectations, and therefore the higher the savings will be. So, in order to realize the potential advantages through adopting E-Procurement, the procurement process within an organization needs to be redesigned. In the successful practices, this redesign focused on:

- Reduction or elimination of authorization stages,

- Regulation of expectations to a limited degree at the beginning,

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- Elimination of paper,

- Integration of suppliers in the entire process chain, and

- Consideration of the complete process, from searching for articles through to invoicing

2.3 Critical Success Factors of E-Procurement

There are few authors who noted that E-Procurement technologies will play an important role in supply chain process like Davila, Gupta and Palmer (2003) has been underlined by the need to document the success factors and experience sharing and also that the rate of adoption will accelerate as aggressive adopters share their experiences and perceptions of low risk. E-procurement technologies are still perceived to involve significant risks. From a technology point of view, the lack of an overall accepted standard is holding back a size able number of companies from adopting technologies. The critical success factors (CSF) in the context of information systems and project management were first used by Rockart (1982). Besides this researcher, there are other researchers have been subsequently reported in this field. The most important thing is the identifying and communicating the CSFs ensures that everyone in the programmer team is focused. A number of structured researches have been conducted since 1982 for identification of CSF for various types of projects.

Extending the work of Leipold, *et.al.* (2004), Vaidya, *et. al*. (2006) and Al-Omoush (2008), we could find literature support for 11 critical success factors and associated sub-factors which could have bearing on e-procurement project outcome.

They include the 5 CSFs identified by Al-Omoush (2008). These CSFs are further briefed as below in subsequent paragraphs.

2.3.1 Top Management Support

Success of any project outcome to a great extent depends upon the top management buy in. Push of the top management and political will has been found to be the most important factor in success of e-procurement implementation in Indian states of Chhattisgarh and Andhra Pradesh.

The executive management team is responsible for setting the vision and goals, bringing about collective commitment for change in process and organizational structures, and formulating the policies and strategies necessary to put an e-Procurement initiative in place (WB, 2003). If the e-procurement system does not have the full support of the top management team, there is every reason for that it to fail. It is important to make sure that the top management has given full support for the adoption of e-procurement. Considerable attention and support should be provided by senior management to ensure that the procurement reform has been well understood in the agency (S and A, 2003).

Setting up milestones, committing necessary resources and mandating use of e-procurement requires commitment of the top leadership to the system. Shaking up of the bureaucratic slumber and ensuring critical inter-departmental coordination (necessary for effective e-procurement implementation) requires push from top leadership.

The stock holders are playing most important role in ensuring success of an e-procurement solution. They must be involved in every step of system implementation. They should be encouraged to use the system and provide feedback for its improvement. The system should be designed to be simple yet effective for use by a not so tech savvy supplier.

According to Vokola and Wilson (2004), top management should identify the E-Procurement project as a top priority for long term business success. Besides that Table 2.1 explained that other research study supported for Top Management.

Table 2.1: Top Management Support

No.	Sub-Factors	Study
1	Understanding of the capabilities and limitation of Information Technology	Somers and Nelson, 2001; Renganathan, 2004; Ngai, 2004; Finnegan and Golden 1996; Jeon, 2006; Eid, 2004
2	Systems alignment with business strategy	Ho ad Pardo, 2004; Kampstra, 2006; Gunasekaran and Ngai, 2004; Dooley and Purchase, 2006.
3	Allocation of appropriate resources	Vakola and Wilson, 2004; Gunasekaran and Ngai, 2004; Parr and Shanks, 2000; Nah *et. al*., 2001; Eid, *et. al*., 2004; Croomand Brandon-jones, 2005; Gunasekaran and ngai, 2008; Kaliannan, Awang, Raman, 2009.

Source: Adapted from Leipold, et. al., (2004), Vaidya, et. al., (2006) and Al-Omoush (2008)

2.3.2 User Acceptance

User acceptance of new information system has a critical and profound impact on the overall usage and success of the system's adoption (Succi and Walter, 1999; Venkatesh *et. al.* 2003). Al-Ghatani and King (1999) suggested that system usage is an obvious defined measure and better indicator of information technology acceptance. According to Davis (1993), user acceptance is often the pivotal factor determining the success or failure of information system. In similar vein, Pikkarainen, Karjaluoto and Pahnila (2004) contended that user acceptance and usage of a system defines the effectiveness or ineffectiveness of the system. Understanding the factors that influence user acceptance of information technology is undoubtedly of interest to both scholars and researchers in a variety of fields as well as procurers of technology for large organizations (Dillon and Morris, 1996).

Once having decided to implement e-procurement solution, it is imperative that way ahead is planned by organization concerned keeping the opportunities and the symbiotic relationships. The implementation strategy should take into account the opportunities that would be available once e-procurement solution is in place. Major benefits from e-procurement are likely to accrue to the government from aggregation of demands of all departments. It would facilitate optimization of costs due to bulk procurement and thus, would help government to leverage its buying power with prospective suppliers. However, aggregation of demands remains a major hurdle due to vested departmental interests, perceived loss of authority and effort required in achieving it. The need for demand aggregation should also be weighed against the degree of decentralization desired for purchases.

2.3.3 Reliability of Information Technology and Suppliers Performance

Since the e-procurement system would undergo vertical and horizontal integration across systems and enterprises, it is imperative that the system be built around well accepted technical, content and process or procedural standards. Additionally, since the system has to meet legal requirement of audit-ability etc., it must also comply with legal or administrative frameworks prevalent in the country. The system should be developed around open source technologies and standards. Hardware optimizations such active-active fail-over, load balancers, proper sizing of servers and finally disaster recovery of the setup should be planned and implemented. The interface design should be intuitive, easy to use and with proper upward-downward navigation. Efforts should be made to reduce the number of mouse clicks required for getting the required information. The interface of the system should be optimized for faster access over slow internet speeds. Exhaustive FAQs and contextual as well as structured help should be prepared and be made available.

Furthermore, if reliability, security and confidentiality of financial data like bid amount etc. are not ensured, e-procurement system may actually promote corruption contrary to its stated benefit. The system and the data contained in it should be well protected by putting information security related hardware (Intrusion prevention system, Antivirus gateways, centralized logging etc.), software solution and (preventive and detective) information security procedures. The selection and employment of appropriate security controls for an information system are important tasks that can have major implications on the operations and assets of an organization. Security controls are the management, operational, and technical safeguards or countermeasures prescribed

for an information system to protect the confidentiality, integrity, and availability of the system and its information.

For an e-procurement system to be effective and ultimately being successful, it is important that the system is integrated with existing IT systems especially financial systems. It is also very important the information shared in real-time across systems is reliable and accurate. All the stakeholders should have controlled access to the e-procurement system data.

Besides that Table 2.2 explained that other research study supported for Reliability of Information Technology and Suppliers Performance.

Table 2.2: Technology Standards

No	Sub-Factor	Study
1	Compliance with the standards frameworks	Chauhan 2010; Doring Kiebling *et. al*., 2006; Knut, 2009; Cimander, Hansen and Kubicek, 2009; Engstrom, Ganasekaran and Ngai, 2008
2	Web-based system scalability	Soliman and Janz, 2004, Wong *et. al.,* 2007, Ball *et. al*., 2002, Galliers and Leidner, 2003

Source: Adapted from Leipold, et. al., (2004), Vaidya, et. al., (2006) and Al-Omoush (2008)

2.3.4 Employees and Management Commitments

Support to the concept, implementation and effective utilization of the e-Procurement systems by stake holders (suppliers, departmental users etc.) is a must. Effective change

management plan in terms of imparting training to stakeholders of the system like internal users, vendors etc. and institutionalized mechanism for obtaining feedback from stakeholders is necessary for smooth roll out of the system. Setup of Help Desk system or call centre, online help, contextual help and FAQs must be available in the online e-procurement portal. Making irreversible changeover to e-procurement is normally the vital first step.

Besides that, training of staff in procurement practices and the use of e-Procurement tools are critical to the success of an e-Procurement initiative (WB, 2003). The staffs of an organization need to acquire the necessary skills that can enable them to operate effectively and efficiently while using the new e-procurement system. If staff is not adequately trained, they may not be able to own the e-procurement system and this may contribute to failure. The success of e-Procurement initiative depends on users and buyers making use of the new process and system. The solution must attract end users to view e-Procurement as the preferred means by which to purchase goods and services (KPMG, 2001). The success of e-procurement also depends on communication to the users (Birks *et. al.* 2001). The organization adopting an e-procurement system must be able to communicate this information to the users. Distorted communication of information may lead to failure of the system. The World Bank (2003) suggests that developing an e-Procurement system in an open environment allows it to link to other systems for interoperability and simplifies upgrading the system.

Table 2.3: Change Management

No	Sub-Factor	Study
1	e-Procurement impact assessment	Al-Omoush 2008; Bof 2010; Bhatnagar, 2010; Aslani, 2008; Brandon – Jones 2009; Kaliannan, Awang and Raman, 2009

Source: Adapted from Leipold, et. al., (2004), Vaidya, et. al., (2006) and Al-Omoush (2008)

2.3.5 Monitoring the Performance

For ensuring that e-procurement system yield intended results, it is important that the system objective are clearly spelt out, measurement of accomplishment undertaken and if necessary course correction is implemented. These clear milestones would also encourage stakeholders to works towards their achievement.

It is significant for the organization to continuously measure the key benefits since it is vital to the successful delivery of a business project. Measurement drives behaviour and is a key to making the change a success (Birks *et. al*., 2001). Establishing goals and baselines is very important. These established goals will enable the organization measure how much has already been achieved as far as e-procurement system adoption is concerned. It is important to define key performance indicators (KPIs) early in the process to enable successful benefits tracking and distil the business case into measurable KPIs.

Table 2.4: Performance Measurement

No	Sub-Factor	Study
1	Sharing a clear understanding of the objective and goals	Umble *et. al.*, 2003; Soliman *et. al.*, 2001; Simatupang and Sridharan, 2005; Kanji, 2002; Kaliannan, Awang and Raman, 2009
2	Measurement of performance against the objectives and goals	Loh and Koh, 2004; Tummala *et. al.*, 2006; Nah *et. al.*, 2001; Croom and Brandon-Jones, 2005; Lee, Oh and Kwon, 2008; Panayiotou, Gayialis and Tatsiopoulos, 2003

Source: Adapted from Leipold, et. al., (2004), Vaidya, et. al., (2006) and Al-Omoush (2008)

2.4 Challenges or barriers of E-Procurement adoption in manufacturing industry

While every sectors are encouraging all organizations including public or private organization to adopt E-Procurement, its implementation does not appear to have been smooth and the rate of E-Procurement implementation success have been less than spectacular, as proved by Steinberg's (2003). Steinberg's (2003) studies showed that "Government E-Procurement projects have been notoriously unsuccessful" The development and implementation of E-Procurement has not been as easy as some of the solution providers suggested, nor has it necessarily brought the anticipated savings. Besides that, engaging suppliers in the process flow, especially brought smaller organizations − is also proving to be difficult given the level of investment expected in

terms of providing catalogs information to buyers, and marketplaces using different technologies, platforms and business languages (OGC, 2002).

Besides the benefits that can be gained from a successful E-Procurement implementation in public or private sectors, the business press has reported a number of failures of E-Procurement initiatives in a number of public and private sectors agencies in the USA, UK, and New Zealand in recent years. As researched by Heywood (2002), E-Procurement will result in large investments of time and money, without absolute certainty that its full potential will be achieved every time.

On the other hand, despite the many advantages the implementation of an E-procurement system offers both for organizations 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).

According to Kyte (2000), 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.

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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.

Besides that, according to 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. Consultant expertise on more advanced procurement initiatives is still spotty and 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.

Other than that, Kanakamedala,Ramsdell and Roche, (2003); Roth, (2001) had explained that 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

This also supported by Aberdeen Group (2001) that Hard to keep controls and data management standards when adding 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.

However there is a feedback that the rumors of E-Procurement's demise have been greatly exaggerated (Harris, 2002). According to Davila, Gupta and Palmer (2003), had conduct a survey of 168 US public and private sectors organizations, indicate that the E-Procurement technologies will become an important part of supply chain management and that the rate of adoption will accelerate as the adopters share their experiences of success factors and perceptions of low risk. This statement similarly supported by Barua, Konana, Whinston and Yin (2001) identified E-Procurement as the element of E-Business most contributory towards the E-Business operational excellence of large corporations.

2.5 Conclusion

In summary, this chapter described about the literature review on study conducted by other researcher regarding the critical success factors of E-procurement adoption. There are mainly five independent variables and one dependent variables that lead to the success of E-Procurement adoption. Besides that, there are few research that also explained the challenges faced by adoption of E-Procurement.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology applies to ways the researcher comes close to problems and seeks answers. This chapter describes the subject of the study and how the researcher was selected for inclusion in this study and the methods used to gather information.

This study adopted a qualitative approach in trying to establish the factors influence the success of E-Procurement projects. There are other designs but the researcher chooses qualitative since it would enable to study the elements in their natural environment without necessarily manipulating them. The objective of the study is to investigate and analysis the critical success factors that play a major role in successful of E-Procurement implementations. This research entails compilation of E-Procurement of extensive literature review, qualitative case study, and formal interaction with few experts staffs. Other than above reason, researcher would like to conduct qualitative study because the sample involved in this research study are few only and the staffs involve in this research study are whoever expert in this area of study.

3.2 Research framework

Internet has significantly influenced organizations intentions to use new inter-organizational systems (IOS) technologies such as E-Procurement. The framework explains the relationship between the dependent and the independent variables in the study. In this study, the dependent variable is E-procurement success. It is considered

dependent since the success of any E-procurement system depends on the outcomes from many factors. Several single factors acting individually have a collective impact on the success on an E-procurement system. The independent variables in this case are the factors that lead to success of E-procurement.

There are several researchers such as Birks *et. al.* (2001), Angeles and Nath (2005) and Mayer *et. al.* (1995) have come up with number of factors that they consider as determinants of E-Procurement success. Some of the factors are Staff training, top management support, user and buyers, selection of actual E-Procurement system. These factors are the independent variables whose collective effect will lead to the success of E-Procurement systems.

Independent Variable

(Critical Success Factor)

| Employees and Management commitments |
| Reliability of information Technology and supplier's performance |
| User Acceptance |
| Monitoring the performance |
| Top Management Support |

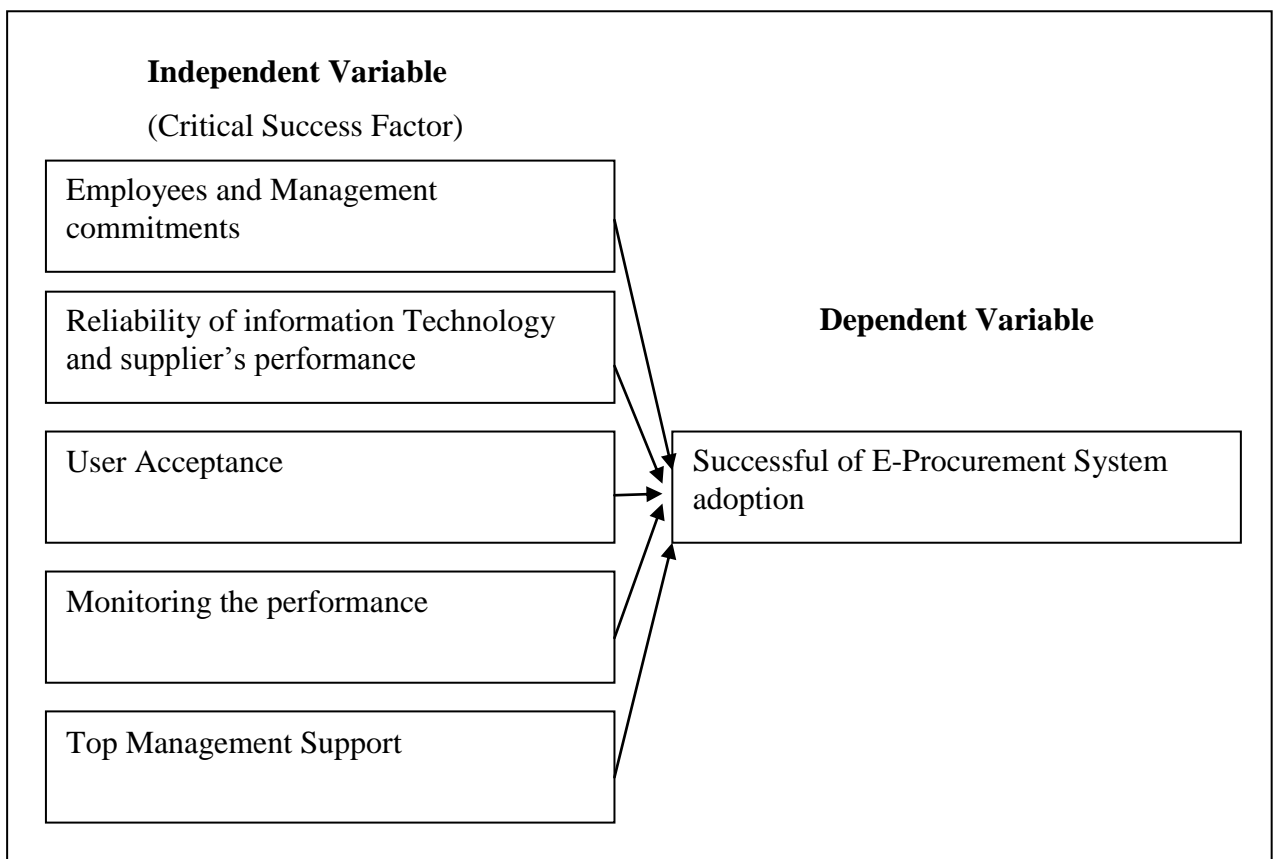**Dependent Variable**

| Successful of E-Procurement System adoption |

Figure 3.1: Research Framework

3.3 Research design

There are many studies already done by other researcher in this topic. James (2013) had done research about this topic by using descriptive approach since it would enable him to study the elements in their natural environment without necessarily manipulating them. The participants in this study were Top Glove staffs who worked mainly in Purchasing Department. Following a review of the related literature, an interview session was used due to gather data from Top Glove staffs.

3.4 Measurement instrument

There are many instruments method that can be used in order to gather the data but for this study researcher had choose interview session with the expert staffs. Under this interview 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.

The intention was to elicit an honest, straightforward response from the staffs about his or her attitudes and perceptions toward E-Procurement. Data will be provided by the Top Glove Staffs. The researcher will conduct an interview session at the Purchasing department office. The purpose was to gather data on Top Glove's E-procurement process as perceived by the staffs' viewpoints, identify the key points of making corporate changes within the organization by using staffs, identify solutions to stay competitive and training encountered by the employee and employers. The instrumentation process involved an interview questionnaire of 10 questions. The research instrument was developed for the study and as such the questionnaire and the data obtained from the questionnaire were original. The questionnaire was designed to determine the critical success factors of implementing "E-procurement" process for a long term. The main purpose of the interview was to attain answers to the objectives previous discussed in the methodolgy introduction and research design part. In order to collect and classify the main data for this research project, the questionnaire was chosen as a research tool. While it is generally the basis of original research, especially the questionnaire developed for this study, therefore is original to the proposition itself. However, the review of published literature lacked recent substantial studies specific to execute organizational change such as "E-Procurement Implementation Process" in the real business from a corporate training standpoint. This study answered questions concerning what staffs values for topics and delivery methods. Clear directions and interview session with Top Glove staffs improved the reliability.

3.5 Data collection

To accomplish the objectives of this study, an interview session was conducted to a staffs in Purchasing Department at Top Glove Sdn. Bhd. The researcher was referred to the interviewee since the interviewee has some amount of experience in implementing e-procurement process recently. The interviewee from purchasing department was identified as a qualified data source for this research project, as his or her professional opinions and viewpoints could best address the research questions.

3.6 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 population of the study in this research was all the staffs who are mainly worked in Purchasing Department. According to human resource head count, there are total 35 staffs registered under this Purchasing Department. From this population, only 10 staffs randomly selected for interview session regarding this research topic who are very expert on this E-Procurement adoption.

3.7 Sampling

Saunders,Lewis and 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.

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).

The interview was conducted on January 15, 2014 at the office of the Purchasing Department. During the interviewing session the interviewee was given directions and questionnaires. The interviewee was only asked the questions which the researcher had prepared in advance. Prior to the date of interview session, the interviewee was informed that the participation in the study was voluntary, and there were no consequences for choosing not to participate. Their answers were recorded for quotation and analysis purposes. The fundamental background of E-Procurement process and consultant's work execution procedure will be learned by information gathering from academic books, the Internet, and various academic journals.

3.8 Data analysis

The researcher conducted qualitative analysis for the data collected from the study. The data collected during the interview session was analyzed to determine the scale that raising potential profit through increased efficiency daily process or reduced costs at the same time. Data analysis for this study consisted of compiling responses to open-ended

questions. All open-ended responses were listed by the researcher and summarized into appropriate headings. The data is clearly displayed through appropriate headings that could potentially be improved. Qualitative data was analyzed by identifying and organizing the qualitative responses that introduced distinctive concepts. The data from the interview will be compiled to determine what characteristics are. The following chapter displays a complete review of the data gathered by interview session.

3.9 Conclusion

In summary, the empirical part of this study started with the determination of the target sample. The responses to the interview session were analysed in order to test the relationships between the variables. The chapter covered the research design, sample size determination, research instruments used and the main data-gathering instrument used. The next chapter elaborates on the steps followed in data analysis and the findings of this research study. The development of the methodology in this chapter guides the analyses and information presentation in next chapter.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter presents information, interprets and analyses the data that was collected through interviews and finally the discussion. The presentation and the findings give way to policy conclusions and recommendations in the subsequent chapter. Questionnaire and samples interview schedules were pilot tested. A pre-test was conducted with five respondents 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 interview questionnaire was produced in final form and used to collect data.

This chapter reports on the results from the interview session with the Top Glove staffs in Purchasing Department. The data gathered from the interview questionnaires based upon the responses of the staffs was used to meet the objective of this study. 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 adoption.The interviewee provided responses that assisted in meeting the objectives for thus research study. The following questions were the questioned used in the interview session instrument.

4.2 Interview session review

Question 1: How do you define the E-Procurement?

Interviewee responded that E-Procurement is electronic implementation of the procurement style, not to be confused with e-sourcing, which is the electronic implementation of the sourcing cycle. It is the technology-enabled acquisition of goods and services required by an organization at the best value obtainable. The goal is the right product or service, at the right place, at the right time, at the right price in the most efficient manner possible. E-procurement is also a collaborative procurement of goods, works and services using electronic methods in every stage for bringing efficiency and transparency. E-Procurement allows organizations to conduct the purchasing process over the Internet without the use of paper.

Question 2: How can the benefits associated with implementation of E-Procurement?

Interviewee responded that while using E-Procurement it is important that Top Glove makes sure that all its employees see the suppliers they have entered into agreements with. And when employees direct their orders to these suppliers they buy higher volumes from them which helps in getting better price and savings. It's also possible to reduce the numbers of suppliers, which leads to better efficiency in processes like invoicing and other information from suppliers. Paper work is decreased drastically with implementation of E-Procurement, as all the processes are automated. Regarding information flow it was felt that suppliers work in more close relation with the company than before, as the stakes for each side are of higher value.

E-procurement is an easier process for employees as they just need to connect with a single process. With internal process it is a benefit as the procurement process is smoother, information flow of is made effortless, easier to handle and the whole process streamlined. The E-Procurement solution also can help in keeping a check on the inventory level, through it is not actually made use of in that context, because the main products purchased are indirect material. Consequently the need to maintaining inventory levels is eliminated and spending is done in a controlled and regulated manner that leads to reduction of unwanted purchasing.

Besides that, E-Procurement leads to better negotiation, information flow and better product quality with added services from suppliers, as the supplier and buyers are more closely related and are indulged in more transactions. Right now in Top Glove there are more than 1000 users (staffs) and 500 users (suppliers) of E-Procurement. The main benefit of E-Procurement is cost saving from all the processes. Cost benefits are more important in implementing the E-Procurement solution as non-cost benefits are harder to show compared to cost benefits.

Question 3: Which various factors would they agreed that contribute to the success of E-Procurement?

There are number of factors that can determine the successful adoption of e-procurement systems. These are the most important factors that a firm needs to pay attention to in their efforts of implementing electronic procurement systems and practices aimed at improving their competitiveness. The respondents were asked to rank to which they agreed with various factors that contribute to the success of e-procurement adoption in

Top Glove Sdn. Bhd using a number scale from 1 to 5. Before conducting the interview session with the experts' staffs, researcher had come out some several critical success factors that will lead to adoption of E-Procurement. The list of critical success factors and the results are listed as below table:

Table 4.1: E-Procurement Critical Success Factors

Critical Success Factors	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
1. Employees and Management Commitments	1	1	1	1	1	1	1	1	1	1
2. Reliability of information Technology and supplier's performance	2	2	3	2	2	2	2	2	2	2
3. User Acceptance	4	4	4	4	4	4	5	5	5	4
4. Monitoring the performance	5	3	2	3	3	3	3	3	3	3
5. Top Management Support	3	5	5	5	5	5	4	4	4	5

- R1 – R10 – Respondents

Source: Research Data

Based on above listed critical success factors, interviewee's responded that the various factors followed by Top Management Support, User Acceptance, Employees

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and Management Commitments, Reliability of information Technology and Supplier's Performance and Monitoring the Performance have been adopted by Top Glove Sdn. Bhd. The interviewee's feedbacks are line with the observations made by other several authors. For example, Birks *et. al.* (2001) figure out that in order any organization to ensure achievement of the E-Procurement objectives; the adoption process should proceed, as far as possible, in alignment with the all business activities. Researcher had summarized the interviewee's feedback regarding the critical success factors of E-Procurement adoption as below:

Critical Success Factors No. 1:

Employees and Management Commitment to Success of E-Procurement Adoption:

According to interviewee's feedback, its shows that employees and management commitment to the success of E-Procurement adoption is the most critical success factors in Top Glove Sdn. Bhd. It should allow staffs to focus on their daily jobs without sacrificing the visibility and management needs to effectively control organizational spending in order E-Procurement system to be successful. They responded that this can be achieved through staff detailed training about E-Procurement system and communicating all the guidelines and procedures that can help easy use of the new technology in their daily task. Moreover they suggested that Top Management should set the vision and the goals that are relevant to the objectives of the organization. In addition to that point, policies should be formulated and strategies set that will enable the adoption of the E-Procurement technology. Besides that, Interviewee's suggest that the

management should equally provide all the financial support that is necessary for the development of E-Procurement infrastructure for easy adoption.

Critical Success Factors No. 2:

Reliability of Information Technology and Supplier Performance:

Interviewee responded that the reliability of information technology is very crucial in the adoption of E-Procurement. Reliable on e-systems enhances security of information, minimizes risks thus leading ti higher levels of acceptance by suppliers and buyers. Thus in order to achieve the targeted reliability, Top Glove Sdn. Bhd, should make sure that their website contents are complete with all relevant information and easy to understand as well as secure. By doing this, interviewee suggested that this will enable suppliers to conduct their transactions with minimal risks. Besides that, interviewee commented that performance by the supplier is also critical in the success of E-Procurement adoption in Top Glove Sdn. Bhd. This stressed that the all suppliers linked with E-Procurement system with Top Glove Sdn. Bhd should be involved in right time from the early stages of E-Procurement adoption process in order to make this system run smoothly. In addition to the supplier involvement, training to the all suppliers on the usage of the E-Procurement technology will equally enhance performance on E-Procurement adoption. Furthermore, interviewee mentioned that the all supplier that linked with this E-Procurement system should also be involved actively in discussions when the management needs to make any changes on the E-Procurement system. By doing like this, this can help to lead to successful adoption of the E-Procurement technology in Top Glove Sdn. Bhd.

Critical Success Factors No. 3:

Monitoring the performance of E-Procurement Systems:

Interviewee's responded that every sector has its own unique transformational challenges in the process towards adoption of an effective E-Procurement solution. Thus, interviewee's suggested that performance monitoring in the adoption of E-Procurement in Top Glove Sdn. Bhd is important since this will ensure that the adoption process complies with organizational rules and regulations thus leading to the success of E-Procurement. Besides that, performance monitoring will also ensure that the E-Procurement process is implemented properly in order to realize the maximal benefits. It is significant for Top Glove Sdn. Bhd to continuously measure the key benefits of E-Procurement since it is vital to the successful adoption of the system. This requires the establishment of performance goals and objectives. These established goals will enable the organization measure how much has already been achieved as far as e-procurement system adoption is concerned.

Critical Success Factors No. 4:

User Acceptance of E-Procurement Systems:

Interviewee's responded that another important factor in Top Glove Sdn. Bhd that was found to be critical the success of E-Procurement adoption was users' acceptance of e-procurement systems. This is also consider as a critical success factors because the acceptance of E-Procurement systems among the users which staffs and suppliers will lead to the success of the system since those involved will have a positive attitude in

learning on how to use the new E-Procurement system thus making it easy to incorporate most of the operations into the system. Besides that, interviewee's commented that the ease with which users could use the E-Procurement system involves the recognition by the senior management of the importance of the ease of using the E-Procurement system for its staff and then chose an application that is easy to navigate. An automatic routing of purchase orders to appropriate managers for approval, access to E-Catalogues, sending purchase orders to suppliers, producing expense report capabilities, encourages employees to accept and use the system without much hesitation. This can lead to successful adoption of E-Procurement systems in Top Glove Sdn. Bhd.

Critical Success Factors No. 5:

Top Management Support:

Interviewee's responded that, support form Top management of Top Glove Sdn. Bhd was also identified as a critical factor that leads to the success of E-Procurement adoption. In generally, if an organization wants to adopt E-Procurement successfully then the Top management has to support the adoption of the new system into their business and integrate it into its overall goal. In Top Glove Sdn. Bhd, the Top executive team is responsible for setting the vision and goals, bringing about collective commitment for change in process and organizational structures, and formulating the policies and strategies necessary to put an E-Procurement initiative in place. On the other hand, if the E-Procurement systems do not have the full support of the Top management team in Top Glove Sdn. Bhd, then the overall system will fail without any

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concrete reason. So, the strategies should be in line with the Top Glove Sdn. Bhd objectives. At last, these identified goals will enable Top Glove Sdn. Bhd measure how much they will achieve as far as E-Procurement system adoption process is concerned.

Question 4: What are the challenges to the success of E-Procurement adoption in Top Glove Sdn. Bhd?

The challenges of automation among the key activities in the procurement unit will hinder the adoption of e-procurement system. The respondents were asked to rank to which they agreed with challenges to the success of E-Procurement adoption in Top Glove Sdn. Bhd using a number scale from 1 to 5. Before conducting the interview session with the experts' staffs, researcher had come out with a list of challenges that could face by the staffs when implementing E-Procurement system. The list of challenges and outcome result had summarized as below.

Table 4.2: Challenges of adopting E-Procurement

Challenges	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
1. Old IT equipment that needs maintenance	1	1	1	1	1	1	1	1	1	1
2. Lack of regular use by employees	5	3	3	5	4	3	3	3	3	3
3. Resistance to change	4	4	4	4	2	5	4	4	4	5
4. Lack of E-Procurement implementation capacity by small suppliers	3	5	5	3	5	4	5	5	5	4
5. Making equipment compatible is expensive	2	2	2	2	3	2	2	2	2	2

- R1 – R10 – Respondents

Source: Research data

From the interview session with the selected experts staffs who are actively involved in E-Procurement adoption, researcher had summarized that in Top Glove Sdn. Bhd had overcome with the following challenges in adopting the E-Procurement system as: usage of old IT equipment that need maintenance or replacement, high costs required to make the equipment compatible, lack of regular use by employees, resistance to change by users and lack of E-Procurement implementation capacity by small suppliers. These challenges also already proved on findings from Moore (2003) who asserts that most manufacturing plants are still using decades-old equipment and parts whose documentation is paper-based and lacks the digital format necessary for E-Procurement system. The other findings on employee resistance are in line with the observation made by Bedell (2002) that E-Procurement systems are a self-service tool thus, end users most of the times resist using them.

4.3 Conclusion

In summary, this chapter presents the results and findings to the research questions. The responses to the interview questionnaire were analysed, to test the relationships. The presentation and the findings give way to the discussion policy conclusions and recommendations in the subsequent chapter. The results obtained from this research are compared to those of earlier research studies. The objective is to identify the similarities and differences with earlier studies and provide generalizable conclusions where possible.

CHAPTER 5:

CONCLUSION AND RECOMMENDATION

5.1 Introduction

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 and private sector and this research contributes to the small but growing number of studies of E-procurement in the context of the manufacturing industry.

This research had several limitations. The limited number of respondents to the interview session prevented more advanced qualitative analysis. In spite of the constraints, interesting findings and observations were made and the following conclusion made in next discussion.

5.2 Conclusion

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.

This study clearly shows that Top Glove Sdn. Bhd has adopted the E-Procurement in their daily activities but still at the early stage of implementation. According to the critical success factors analysis conducted, this study identified the following five main factors that lead to E-Procurement success in Top Glove Sdn. Bhd which is employees and management commitment to success of adoption; reliability of information technology and supplier performance; monitoring the performance of E-Procurement systems; user acceptance of E-Procurement systems and Top Management support. Besides that, concerning about the challenges faced by Top Glove Sdn. Bhd of adopting E-Procurement systems, this study shows that experience resistance to change from employees as well as lack of managerial support. The following conclusions were made based on the objectives of the study. From the findings of the study, it can be concluded that Top Glove already started to implement E-Procurement since last year September, 2013 with the following E-Procurement practices: online issuing PO to suppliers, receiving quotation through online from suppliers, and etc. 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).

The five main critical factors identified from the study that lead to E-Procurement success in Top Glove Sdn. Bhd are: employees and management commitment to success of adoption; reliability of information technology and supplier performance; monitoring the performance of E-Procurement systems; user acceptance of E-Procurement systems and Top Management support.

The challenges of adopting of E-Procurement in Top Glove Sdn. Bhd that were established from the study are: resistance to change from employees, lack of e-procurement approval by company board, existence of old it equipment among the firms that need proper maintenance and lack of managerial support. Besides that, these challenges also already proved on findings from Moore (2003) who asserts that most manufacturing plants are still using decades-old equipment and parts whose documentation is paper-based and lacks the digital format necessary for E-Procurement

system. The other findings on employee resistance are in line with the observation made by Bedell (2002) that E-Procurement systems are a self-service tool thus, end users most of the times resist using them.

In spite of above comments, interesting findings and observations were made and the some conclusions were 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 organizational 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.

5.1 Recommendations

Researcher would like to highlight few recommendations based on the research. The findings indicate that there are a number of other manufacturing firms that have not fully adopted E-Procurement systems. It will be important to conduct a study to find out the reasons why some of these companies have not incorporated all the procurement activities in E-Procurement. A qualitative study will be critical in order to establish whether there are any similarities or differences in the factors leading to success of E-Procurement. The manufacturing industry results can be compared to another industry. Besides that, other researcher in future can conduct a quantitative study in order to evaluate accurately the success of E-Procurement adoption.

On the other hand, to make this E-Procurement technology more successful, managers or top management must plan and lay E-Procurement technology groundwork. They must believe in the benefits achieved of this E-Procurement technology, opt for a comprehensive approach, define new relationships with vendors, train and support suppliers, and openly communicate with employees.

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