Chapter 2
E–Procurement System and Adoption for SMEs

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ABSTRACT

An electronic procurement (e-procurement) system is an electronic based procurement style that facilitates effective communications along the entire supply chain. E-procurement accelerates SMEs (small and medium size enterprises) at a reduced cost. The purpose of this chapter is to show that adoption of an e-procurement system is essential in the supply chain for SMEs and to find solutions in order to make using this system as easy as possible. The adoption should be considered as a re-engineering process from an innovative perspective. An adoption plan is proposed within the study. It contains three phases: 1) identification of the e-procurement process, 2) seeking integration points with other elements of the system, and 3) IT implementation of the integration areas. The study also proposes to use business process management tools that have workflow engines and Web service implementations for integration points. Although BPM (business process management) tools are seen as quite expensive to SMEs, there are also dependable free licensed ones. The study is concluded with a case-study that is implemented with a free-licensed BPM tool for proof-of-concepts.

INTRODUCTION

The electronic procurement (e-procurement) system is a key system that facilitates effective communications between buyers and suppliers whilst also providing opportunities for making the system more flexible and efficient. It enhances the selection of products, and makes information more effortlessly accessible. There have been many studies on e-procurement systems. According to these studies, e-procurement allows enterprises to decentralize operational procurement processes

and centralize strategic procurement processes as a result of the higher supply chain precision supplied by e-procurement systems.

The study in this chapter aims to illustrate the significant importance of e-procurement for SMEs enabling the implementation of e-procurement within an adoption plan. The plan will be illustrated in a case-study. The remainder of the chapter is organized as follows:

The first part of the chapter explains the e-procurement system and its impacts on enterprises and literatures about e-procurement systems will be addressed in this part. Since the mid-1990s, especially after the development of the internet, e-procurement has taken an important role in the supply chain. Via the Internet, communications amongst the supply chain network became much easier. The internet and aspects of it have made e-procurement enablement more viable and new concepts of communication like Business-to-Business (B2B) i.e. commerce transactions between businesses such as between a manufacturer and a wholesaler, Business-to-Consumer (B2C) i.e. activities of businesses serving end consumers with products and/or services have been encompassed in the supply chain. Today, the e-procurement system is almost crucial in the competitive market where it is necessary to be flexible in order to survive especially for SMEs. Even though there is a small cost associated with integrating the supply chain with this kind of system, the return on investment (ROI) is comparatively high.

The next part of the chapter is to propose an e-procurement adoption plan for SMEs. The adoption can be seen as an innovative strategy that begins with the identification of the process. The next step in the plan is to identify the interaction / integration points in the process. The integration point is not restricted to users but to all members of the supply chain including vendors, banks etc. The interaction points should be implemented with IT as the enabler of the innovation.

The chapter is concluded by a case study that illustrates the application of the adoption plan for a SME. It consists of a procurement process and graphical representation of the process with a BPM tool. The process also includes the web services that supply the information flow among the members. Those web services are implemented within the case study and supplies an appropriate approach to implementing an e-procurement system for SMEs. In the implementation, free licensed tools (software) are used in order to encourage SMEs to use them frequently.

BACKGROUND

E-Procurement System

In this section, the e-procurement system, its definitions, and concepts in associated literatures will be addressed in greater detail. Electronic procurement (e-procurement) has been identified as the most important element of e-business operational excellence. It has been becoming widespread throughout the business environment. According to Wyld's (2004) study, it was reported that currently almost half of all American companies use e-procurement systems. E-procurement technology is defined as any technology designed to facilitate the purchasing of goods by a commercial or a government organization over the internet. (Davilla *et al*, 2003). According to Shaoling & Yan (2008), it can be seen as the technology that opens doors to a purchasing network for suppliers and buyers, expanding the selection of products and making information more easily accessible.

Rajkumar (2001) addressed the business and technology issues for e-procurement system. The technology side is illustrated in Figure 1. It can be seen that an e-procurement system has two types of stakeholder: buyer and seller. A customer with company A (as buyer) uses the purchasing software and places an order on company B's (as seller) system over the internet. The two companies have their own internal ERP (enterprise resource planning) / DBMS (database management system).

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