Chapter XV
Application of Web Services in the Context of E–Procurement:
An SME Foci

Stanley Oliver
University of Bolton, UK

Kiran Maringanti
University of Bolton, UK

ABSTRACT

This chapter highlights the importance of e-procurement and the barriers affecting its widespread adoption in the context of small and medium enterprises. The chapter takes a technical perspective and critically analyzes the importance of information systems in the procurement domain and the integration challenges faced by SMEs in today's digitally networked economy. Next, the role of XML-based Web services in solving the integration challenges faced by SMEs is discussed. Subsequently, a procurement transformation framework enabled by Web services which provides a clear methodology of the way in which information systems should be introduced in the procurement domain is discussed. The chapter concludes by a discussion of the measures that must be undertaken by various stakeholders like the government and universities in increasing the awareness levels of SMEs to the latest e-business mechanisms.

INTRODUCTION

Micro, small and medium-sized enterprises (SMEs) play a central role in the world economy. They are a major source of entrepreneurial skills, innovation, and employment. There are an estimated 75 million SMEs worldwide, which represent about 99 percent of all companies (IBM, 1998). Zheng, Caldwell, Harland, Powell, Woerndl, and Xu (2004) find that the "Internet presents many opportunities for SMEs to harness the benefits of Information and Communications Technologies (ICT)" (p. 27-39). E-procurement, which is the utilization of the Internet in enabling and streamlining the entire procurement cycle, has been identified as a very important area of concentration for SMEs (ABI, 2003; OGC, 2005). "Electronic procurement specifically and eCommerce generally will knit supplier and buyer business processes together to deliver seamless transactions" (Cavinato & Kauffman, 2000). Large enterprises have already invested

huge amounts of resources in e-procurement and are reaping the benefits of it. E-procurement is being championed by larger enterprises, mainly to save transaction costs and reduce prices. But potentially they also offer opportunities for SMEs to find new business partners and to benefit from closer integration into the value chains of large companies (ABI, 2003).

It is pertinent to study the impact of e-procurement on SMEs owing to many factors:

1. Many large organizations' supplier base consists of small and medium enterprises (SMEs), and without the full participation of these SMEs, the initiatives of large corporations will not be successful.
2. The application of emerging information technologies (IT) has often proven to be a complex job for SMEs.
3. SMEs are often at a disadvantage in terms of finance, technology, human resource development, and networking (UN-ECE, 1997); in the case of information technologies, the task seems even more daunting, owing to the highly complex evolving process and also the challenge in successfully deciphering a business case for the justification of its investment.

In this chapter, we will look at the evolution of procurement and look at the importance of e-procurement for SMEs. We will also look at the barriers to the widespread adoption of e-procurement and how the deployment of Web services will help overcome those barriers.

BACKGROUND

This section offers primary insight into procurement, e-procurement, inter-organizational information systems, and supply chain management. We believe these areas are closely knitted and usually overlapping.

Procurement

Every business, irrespective of its size and sector, are involved in some form of buying and selling. Procurement is an unavoidable and important business function. A typical firm spends at least half of its revenues on external purchases of goods and services (Markham, Morales, & Slaight, 2000). Procurement is defined by Gebauer, Beam, and Segev (1998) as "including all activities involved in obtaining, transporting and moving material towards the production process." Though procurement has long been overlooked as a backwater, repetitive function, nevertheless it is indispensable, it forms the bedrock of the company, and it is a core business function. A study made by AT Kearney on European and North American manufacturers found that in 1985, 30% of the total manufacturing cost stemmed from purchased material and services. In 1995, the figure rose to 55%, and for 2005, it was estimated to rise to 85%, which makes procurement a very important function (Knusden, 2003). Since the procurement process is located at the beginning of the value chain, any ripples created here will be echoed right across the supply chain. But traditional procurement processes are muddled with inefficiencies, and leave scope for non-compliance with existing procurement policies.

Procurement, purchasing, and supply management are simply different terms used in the literature to describe the same activity. But we prefer the usage of the term "procurement." Knusden (2003) justifies the usage of the term "procurement" by asserting that "it neither rules of the operational nor the strategic aspect of acquiring external resources." Procurement is the name given to a very broad purchasing function which includes basic steps like making a requisition for goods, to much more complex aspects like sourcing and logistics. Thus, the scope of procurement is very wide, making it a very important component of supply chain management. Typically, a company's procurement function is subdivided into strategic

Related Content

Facilitating Design of Efficient Components by Bridging Gaps between Data Model and Business Process via Analysis of Service Traits of Data
Ning Chen (2009). *Services and Business Computing Solutions with XML: Applications for Quality Management and Best Processes (pp. 114-120).*
www.irma-international.org/chapter/facilitating-design-efficient-components-bridging/28971

Understanding Feral IT Practices as Deviance: The Contribution of Merton's Theory of Anomie
Shubhankar Thatte, Nick Graingerand Judy McKay (2014). *Feral Information Systems Development: Managerial Implications (pp. 189-208).*
www.irma-international.org/chapter/understanding-feral-it-practices-as-deviance/94682

New Directions in SAP R/3: Service Oriented Architecture (SOA) and Netweaver
Chetan Sankarand Karl-Heinz Rau (2006). *Implementation Strategies for SAP R/3 in a Multinational Organization: Lessons from a Real-World Case Study (pp. 260-285).*
www.irma-international.org/chapter/new-directions-sap/22479

A Relative Comparison of Leading Supply Chain Management Software Packages
Zhongxian Wang, Ruiliang Yan, Kimberly Hollisterand Ruben Xing (2010). *Business Information Systems: Concepts, Methodologies, Tools and Applications (pp. 588-604).*
www.irma-international.org/chapter/relative-comparison-leading-supply-chain/44097

Social Networks and Internet Communities in the Field of Geographic Information and Their Role in Open Data Government Initiatives
Paula Díazand Joan Masó (2014). *Frameworks of IT Prosumption for Business Development (pp. 284-314).*
www.irma-international.org/chapter/social-networks-and-internet-communities-in-the-field-of-geographic-information-and-their-role-in-open-data-government-initiatives/78782