Preface

The Internet is an enabler. It has enabled us to break free of time and space barriers. This has resulted in the emergence of a new economy. Despite the initial confusions and the dot com burst, the value of the Internet as an enabler cannot be questioned. However, its impact on emerging economies is not well understood. We believe that the value that the Internet can bring into these economies is far greater as compared to what it has brought to developed economies. Business-to-business (B2B) transactions, enabled by the Internet, are what we will study in this book. When enabled by the Internet, we can see various facades of B2B transactions. Different areas, usually overlapping, have emerged in this space, such as: reverse auction, online bidding, e-purchase, e-sourcing, supplier relation management, and so forth. However, we have taken the liberty to ignore the differences and used an umbrella term of “e-procurement.” E-procurement is defined as the usage of Web-based functions and services that allow employees of a buying organization to purchase goods and services, and allow suppliers to manage and communicate the fulfillment of those purchase orders which have been submitted (Rayport & Jaworski, 2002). Typically, an e-procurement tool provides functionalities such as: catalog management; requisition, control, and approval; receiving and exception processing; financials and payment processing; logistics and supply-chain management (Subramani, 1999).

What is an emerging economy? The term “emerging markets” was coined in the early 1980s by Antoine W. van Agtmael to describe nations with low-to-middle per capita incomes and that are instituting economic development and reform programs which will allow them to “emerge” into the arena of global economic competitiveness (Agtmael, 1984). Emerging economies are
characterized as transitional, meaning they are in the process of moving from a closed to an open economy while building accountability within the system. Thus despite the difference in income level, bigger economies such as India and China are clubbed with smaller economies such as Slovenia, because they are all transitional. This characteristic makes emerging economies a high risk and higher return economies. Changes in economic systems have also resulted in changes in people, processes, culture, social fabric, and so forth. These changes have brought in new work ethics and standards. Thus, studying e-procurement in an emerging economies’ context could be very interesting.

Why should we study e-procurement from an emerging economies’ perspective? Manufacturing and services are being outsourced to places which are specialized in performing these activities or can perform it at the lowest possible cost. The Internet has enabled organizations to accept an order from a customer, decompose it into pieces, and forward those pieces to suppliers spread across the globe. Increasingly, these manufacturers are located in emerging economies. Thus any e-procurement initiative needs to be understood from the emerging economies perspective. Further, time and space barriers are more prevalent in emerging economies as compared to developed economies. Hence, if applied well, e-procurement can bring in unprecedented benefits to these economies. As illustrated in the chapter contributed by Dr. Somasundaram, in emerging economies, government procurement runs into billions of dollars, with rampant corruption in the process. For example, in 2004-2005, the government of India procured goods and services worth approximately US$100 billion. If it can save only 10% in this process, the resultant savings will be approximately 32% of its fiscal deficit.

This book will focus, primarily, on e-procurement usage in emerging economies. Literature on e-procurement is synthesized from the experience of developed economies, and hence the theory is also grounded in the same context. However, socio-economic context in emerging economies is different from that of developed economies. Hempel and Kwong (2001) argued that there is a fundamental difficulty in applying the Western best practices in e-commerce to Asian economies because of differences in business and cultural assumptions. For example, several infrastructural facilities that are taken for granted in developed economies are not available in emerging economies. Our case study on Indian steel industry (Pani & Agrahari, 2004) also suggests that in emerging economy inter-mediators offer services such as working capital management, logistics, and so forth. Hence when an e-procurement initiative tries to disintermediate the market, it has to create all services that
intermediators used to offer. This might be an expensive proposition since existing infrastructure is poor.

Although we will study e-procurement, we will not limit ourselves to e-procurement alone, for procurement does not happen in a vacuum. It is important to understand the context in which e-procurement occurs. Issues such as overall industry structure, political environment, and societal and organizational culture are some of the issues that a procurement manager should be aware of. For example, in countries like India and China, trade is mainly conducted in a close-knit social network. Thus a supplier who is not included in these networks has very little chance to participate in trade. An e-market will force itself in challenging such a network and may not be received very well. Similarly, digital divide is another important phenomenon that needs to be understood before any e-procurement initiative can be undertaken.

Information systems shape and gets shaped by the environment in which they operate. This book is an attempt to understand how e-procurement is being shaped in emerging economies. Grounded in the socio-technical reality of emerging economies, this book tries to touch upon various issues such as culture, digital divide, country characteristics, and technologies used in various countries. Contributors from Italy, China, India, Turkey, Slovenia, Australia, and the United Kingdom have brought in case studies and theoretical insight on e-procurement and its implications for emerging economies. This book thus covers the entire gamut of issues that are relevant to understand how Web-based function and services affect buyer-supplier interactions in emerging economies.

**Chapter Organization**

This book tries to assimilate the knowledge on e-procurement initiatives in emerging economies. Authors from various part of the world have contributed excellent chapters on various issues. These chapters are divided into four sections. The first section elaborates on theoretical underpinnings, and presents an overview of the concept of e-procurement. E-procurement can be analyzed using various lenses such as transaction cost economics, inter-organizational interdependencies, value chain, and so forth. Both chapters in this section have tried to touch upon these theoretical lenses. In the first chapter, Pani has offered a detailed overview of existing literature on EDI, IOIS, and e-procurement. This chapter looks into prior research on inter-organizational
information systems, electronic data interchange, and procurement to develop a research framework and identify research issues in e-procurement. It is argued that supply market characteristics and product characteristics can explain the emergence of various types of the e-procurement model. Further, these e-procurement models have different impacts on inter-organizational relationships and amount of value generated. However, these impacts are moderated by adoption and implementation risks.

In the second chapter, Vaidya has argued that the focus of the majority of research on e-procurement has been on the possible impact of e-procurement adoption on the buyer’s interaction with the suppliers, whereas very little has been discussed about e-procurement assimilation. This chapter looks beyond the decision of adoption of the technology, investigating the environmental conditions that may influence the successful assimilation of e-procurement in the public sector organizations. Using institutional theory and building on prior research on the theories of technology assimilation, this chapter investigates the institutional factors that enable higher levels of e-procurement assimilation in the public sector, and also argues that the e-procurement benefits greatly depend on the operational and strategic organizational assimilation of e-procurement with different levels of success. This chapter also discusses the need to integrate other theories such as Diffusion of innovation theory, transactional cost theory, and structurational theory of technology use, and proposes a holistic research model in order to investigate the antecedent conditions that are likely to influence the assimilation of public e-procurement.

The second section of this book focuses on country level analysis. Three developing countries, India, Turkey, and Slovenia, are analyzed by different authors. Chapter III is an excellent contribution by Podlogar, who focuses on e-procurement success factors from a small country’s perspective. This chapter introduces e-procurement as a strategic tool for an organization’s competitive position in the new information economy. It argues that e-procurement is significantly changing the ways businesses operate, and new business models are needed. E-procurement success factors that have to be considered are: cost factors, time factors, process simplification factors, and the volume of e-transactions factors. By gaining understanding of the most important e-procurement factors, organizations have to organize themselves in a way that ensures success. Furthermore, the author hopes that with knowing such factors, organizations will be able to better prepare for e-procurement and thus operate successfully and be able to compete in the global market.
In Chapter IV, Somasundaram has explained the concept of e-government procurement (e-GP), as it is being implemented in India. Furthermore, a set of six challenges encountered during implementation of e-procurement is discussed in depth. The six challenges discussed in the chapter are: lack of skilled personnel; multi-departmental implementation; inadequate IT and networking infrastructure; challenges in implementation of a state-wide system; the need to regulate e-procurement market; and replicating best practices in federal-state setup. A practitioner’s perspective is adopted to write this chapter. While this chapter deals specifically with e-GP in India, certain aspects of it can be generalized to e-GP implementations elsewhere in the world. Such generalization is possible since government procurement is driven by the same set of principles such as efficiency and transparency.

In the fifth chapter, Yamamoto and Karaman have argued that e-procurement practice is not well established in emerging countries. There are barriers in terms of transportation, financial, telecommunication, and legal infrastructures. Also, a lack of a qualified workforce, cultural barriers, and security problems hinder the development of e-procurement activities. These are not such significant problems in the developed countries. The authors have analyzed macroeconomic data and Internet penetration data, and have presented a picture of the current situation of Turkey. They then discuss how these barriers can be overcome in Turkey. Finally, the authors have predicted how e-procurement may alter the situation and its potential for the Turkish market.

Section III analyzes various facades of e-procurement adoption. It contains chapters on cultural issues in buyer-supplier relation, digital divide, and game theoretic analysis of e-procurement adoption efforts. Chapter VI, by Xu and Nandhakumar, investigates the dynamics of the formation and transformation of electronic supply relationships (e-supply relationships) in the Chinese cultural, technological, and industrial network context. It focuses on a newly-formed large Chinese telecom company. The aim is to provide better insights into inter-organizational relationships (IORs) enabled by the application of newer types of Internet technology in different contexts, and to develop a new conceptual framework of e-supply relationships. In this research, the conceptualization of the transformation process of e-supply relationships represents circuits of interactions between managerial actions and social structures, as well as the particular cultural and technological context within which the interactions take place.

Chapter VII, by Serrecchia, Serrecchia, and Martinelli, analyzes the digital divide in Italy and the factors contributing to this situation, both at the regional
and provincial levels. To do this, they used the registration of Internet domains under the “.it” country code top level domain as a proxy. In particular, they analyzed domain names registered by firms. This analysis has produced interesting results: The distribution of domains registered by firms in Italian provinces is more concentrated than the distribution related to income and the number of firms, suggesting a diffusive effect. Furthermore, in order to analyze the factors that may contribute to the presence of a digital divide at the regional level, a regression analysis was performed using demographic, social, economic, and infrastructure indicators. The results show that Internet technology, far from being an “equalizer”, follows and possibly intensifies existing differences in economic opportunity in industrialized countries like Italy.

E-procurement adoption effort is analyzed in Chapter VIII. It includes a case study that looks into the evolution of various e-procurement systems at an Indian steel manufacturer, Tata Steel. This chapter argues that rather than sticking to one system, organizations need to manage a portfolio of e-procurement systems to realize the full potential of the Internet. Further, these systems evolve over a period of time, thus necessitating dynamic instead of static analysis. Prior research has analyzed e-procurement and its predecessor, EDI-based IOIS, as a static game with adoption and subsidy being the key issues. However, with e-procurement increasingly being a competitive necessity, the issue is not “if to adopt e-procurement” but “how to adopt e-procurement.” This chapter analyzes e-procurement adoption efforts in a dynamic game setting. First, e-procurement adoption effort is analyzed in a “without subsidy” scenario and then in a “with subsidy” scenario. Results show that e-procurement adoption efforts are likely to be more if the buyer and suppliers are not myopic, and the rate of decay in strategic benefits from the dyadic relationship is low. Further, the buyer can induce more effort from the supplier by offering him subsidies. The buyer will offer subsidy only if he can take away more than half of the total e-procurement benefits. The level of subsidy depends on the effectiveness of the supplier’s e-procurement adoption effort. Results for the game theoretic model are corroborated with the case study.

Section IV offers a technical perspective to e-procurement. It is dominated by the discussion on Web services. Chapter IX, contributed by Patra, argues that globalization has evoked rethinking in organizing the business processes of many enterprises in order to keep pace with the competition and dynamic nature of the market. There has been continuing research for suitable paradigms and technologies that can facilitate efficient and yet less expensive
solutions, a feature that is so important for small and medium sized enterprises (SMEs). Towards this end, this chapter presents a service-oriented framework that is based on the notion of Internet-accessible services to represent applications and to integrate business processes. This model propounds a metadata-driven approach to dynamically publish, discover, and select services in heterogeneous settings while engaging in business transactions such as e-procurement across organizational boundaries. The concept of software agents is also employed as a means to automate the activities relating to a procurement cycle. The central theme of this chapter is to motivate the adoption of a service-oriented agent-based framework which can provide effective and efficient solutions to e-procurement.

Chapter X, contributed by Oliver and Maringanti, highlights the importance of e-procurement and the barriers affecting widespread adoption of it in the context of small and medium enterprises. This chapter takes a technical perspective and critically analyses 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.

The last chapter, contributed by Shrivastava, Gupta, and Mohapatra, examines the features of reverse auction sites. Twenty-five features of 38 reverse auction sites have been studied. These features are divided into core and complementary features. These sites are broadly divided into B2B/B2G and B2C/C2C groups. They have shown the differences that exist in the site design of these two groups insofar as the inclusion of these features are concerned. Weights are derived, signifying the importance which the site designs have assigned to various complementary features. These weights are used in two ways: (1) to provide benchmarks to evaluate the design of the Web sites, and (2) to find out the site evaluation index of any Web site for comparison with the benchmark. Using their complementary features, weights are derived for the features and develop site evaluation index for them.

Thus, this book has covered a vast landscape focusing on emerging economies. To our best knowledge, no book has ever looked into e-procurement in emerging economies. Further literature in this area is rather scarce and scat-
tered. We hope this book can fill this gap by providing a platform for creation, contribution, and assimilation. We have looked at both managerial and technical challenges faced by organizations in emerging economies. We have also looked at the solution approaches to various infrastructural problems faced in these economies. We hope this book will be useful for both academicians and practitioners. It can serve as a reference for the students to understand how socio-economic context affects usage of a particular technology.

References


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