

## Chapter 5

# Technology Advancement and E-Procurement in the US

**Joshua M. Steinfeld**

*Florida Atlantic University, USA*

**Khi V. Thai**

*Florida Atlantic University, USA*

### ABSTRACT

*E-procurement has had a tremendous impact on the modernization of government and administration. In the U.S., the relationship between technology and e-procurement is central in determining the ability to adopt successful e-procurement. Significant investment in technology and human capital is required for the implementation of e-procurement systems. Despite widespread efforts to initialize e-procurement through direct investment in information and component technologies, a substantial portion of administrations' efforts at achieving e-governance have failed. The need for customized solutions and managerial intervention has challenged government at all levels. Furthermore, technological advancement has not been welcomed by all administrations. Nonetheless, the advantages of e-procurement typically justify the effort required to implement and maintain such systems. Reductions in transaction costs, increased transparency, and improved relationships between government and businesses are all advantages of e-procurement. While there are significant challenges to e-procurement not limited to corruption, the benefits of e-procurement far outweigh the costs.*

### INTRODUCTION

Technological advancements since the 1960s have had a profound effect on public procurement in the U.S. The emergence of e-procurement has been one of the most impactful facets of modern government and administration. By using information technology, procurement approaches to the

market can be aggregated and decision-making devolved. However, best practices frameworks for the implementation and sustainability of e-procurement that can be applied to all levels of government are yet to be established. Furthermore, challenges related to implementation, sustainability, and corruption present obstacles to the effective adoption of e-procurement.

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The main purpose of this chapter is to demonstrate the important relationship between technology and e-procurement in the U.S. While numerous local, state, and federal governments have invested in new technologies that enable the initial implementation of e-procurement, successful adoption is often overstated. E-procurement has a humanistic element involving public procurement managers, senior officials, and the bureaucracy. Transparency and accessibility to the marketplace are two key elements provided by effective utilization of e-procurement systems. Conversely, corruption is a major challenge that threatens administrations attempting to incorporate e-government. While the third sector, consisting mostly of non-governmental organizations, has appeared as a facilitator to transactions taking place in the public sector, the involvement of non-government organizations is understudied and requires more research.

E-procurement improves customer effectiveness, sharing of data, and overall quality of public procurement. The reduction of transaction costs and other economic benefits are additional advantages to implementing e-procurement. However, successful implementation of e-procurement systems requires significant financial investment and managerial attention. Investment in e-procurement technologies alone is not sufficient to develop an e-procurement system.

The continually developing synthesis between technology and the public sector indicates that e-procurement processes are of a reflexive nature. E-procurement systems have the potential to improve relationships between government and business by providing market participants with transparency and accessibility. However, the ability to successfully utilize e-procurement systems largely depends on the maturity level of the e-procurement system and the underlying administration using the system. The development of information, communications, and component technologies can help public procurement manag-

ers implement customized solutions that may serve to address the complexities inherent to the public sector. Nonetheless, investment in human capital is paramount; significant managerial efforts are required to alleviate any technological constraints.

## **TECHNOLOGY ADVANCEMENT**

Over the last 40 years, public sector organizations have been utilizing Information Technology (IT) systems to streamline and automate purchasing and related processes, but it is only in the past decade that e-procurement systems have been of focus. Developing e-procurement processes is difficult and still in its early stages of technological development (Pooler, Pooler, & Farney, 2004). There is certainly debate regarding exactly when e-procurement came into being, but there is no question as to the many advantages that e-procurement provides over previously implemented inter-organizational tools. For example, electronic data interchange has been used to support transactions involving suppliers and buyers since the 1960s. In the 1970s, enterprise resource planning dominated e-procurement strategy and with it came the first commercial use of the Internet. However, it was not until the late 1990s that the World Wide Web and its multimedia capabilities became a globally enabled resource for the execution of public procurement activities (Office of Government Commerce, 2002). The U.S. is regarded to be the first nation to adopt e-procurement in the late 1980s and early 1990s. The first use of e-procurement in the public sector can be attributed to U.S. innovation that led to “dual use” technologies and “conversion” of military technologies into civilian applications in strategic high technology sectors (Mowery, 2001). Although “dual use” programs and “co-operative” technology development policies were mostly dissolved by the late 1990s, they serve as

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