



Chapter V

**Promoting Electronic
Commerce in the Defense
Industry**

Charles V. Trappey
National Chiao Tung University

Amy Trappey
National Tsing Hua University

Thomas Gulledge and Rainer Sommer
George Mason University

INTRODUCTION

Beginning in 1993, when the U.S. Federal Government proposed the “framework of electronic commerce (EC),” the call went out for the wide-scale deployment of EC solutions in government. The Department of Defense immediately became the center of attention since it has the largest procurement budget of all. Initiatives were launched to move from a paper-driven procurement process to an electronic, on-line concept satisfying federal mandates. However, the defense industry consists of thousands of small and medium sized enterprises (SMEs) that were far from ready to conduct business with the government electronically. In order to help the Department of Defense (DoD) and its suppliers to comply with the EC mandates, 17 Electronic Commerce Resource Centers (ECRCs) were established across the U.S. to transfer process improving and enabling EC technologies to small and medium sized businesses and government agencies. Each ECRC comprises business partners (and several university partners) that provide EC outreach, training and technical support to DoD supply chains. The goal of the nationwide network of centers is to facilitate the transition from paper-dependent supply chains to fully electronic-based procurement environments. In order for SMEs to do business with the U.S. government electronically, the mission of the ECRC must grow beyond training and outreach to hands-on implementation and intervention in SMEs.

In this chapter, the key issues, approaches and challenges of bringing EC to defense supply chains are described. The chapter first discusses the complexity of defense supply chains and the efforts underway to make the procurement processes EC compliant. The

related government laws and regulations are outlined to set the legal foundation for EC implementation. Then, the elaboration of the ECRC model provides a detailed view of the collaboration between industry, academia, and government to improve defense industry supply chains. Details of a local ECRC's operations are provided to demonstrate its functions and accomplishments. Case examples of the center's operations and technical support are provided to show how the technology is transferred to the SMEs. The chapter concludes with a description of future directions in EC promotion, education and support necessary for the defense industry to change and to do business electronically.

BACKGROUND AND GOVERNMENT EFFORTS

The nationwide network of ECRCs are designed to assist the transfer of information technology (IT) and specifically EC technologies to defense supply chains. The specific tasks and the organization of the national network are defined and orchestrated through a series of government efforts and initiatives. In this section, the background of the defense supply chains, EC-related government legislation and regulations, and DoD initiatives provide a view of why the ECRCs have been opened across the United States.

The Defense Industry Practice

The means and methods by which the United States Government adopts information technology are different from and often slower than the American commercial sector (DoD, 1997a). Whereas U.S. businesses realign management practices, corporate knowledge, and information systems as the result of competitive forces (Davenport and Prusak, 1998), the Department of Defense is unique in the way it restructures the organization. Sullivan (1996) and Kelly et al. (1999) write that the DoD proceeds for long periods of time without significant change and strives to keep the organization "as-is." Keeping the organization as-is allows for continuous change at the component level (among the services, the joint chiefs, etc.) but maintains unnecessary infrastructure.

The impetus to change the organization, particularly defense industry supply chains, tends to come from outside the organization rather than from within. For example, changes in national resource requirements or in national military strategy will lead to top-down directives from senior DoD leadership or Congress, but often these directives are met with arguments and resistance (Graham, 1998). Even though individuals within the organization may recognize a need to migrate toward new strategies, enterprise-wide organizational change is resisted and is difficult to manage.

The culture of the DoD is paper-driven, with as many as 13 copies of a contract printed and sent to multiple offices. The Defense Reform Initiative Report (DoD, 1997b) notes that in 1996, the Defense Finance and Accounting Service Center processed over 5.6 million contractor invoices, made payments against 387,000 major contracts, and disbursed over 84 billion dollars. The paper-bound system for the Service Center has generated over 15 miles of paper files and operations have become increasingly costly and difficult to manage. Electronic commerce solutions are the means of choice to improve efficiency and reduce paper in procurement, weapon systems programs, and personnel administration.

E-Commerce Related Laws and Regulations

The e-commerce efforts in the defense industry are initiated through laws and

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/promoting-electronic-commerce-defense-industry/9627

Related Content

The End of Enron's Empire

John Wang, Qiyang Chen, James Yao and Ruben Xing (2006). *International Journal of Cases on Electronic Commerce* (pp. 1-12).

www.irma-international.org/article/end-enron-empire/1494/

Navigating Practical Trade-Offs During Prototype Testing

Weichao Chen, Anindita Paul, Francis Kibaru, Yanfei Ma and Dinara Saparova (2016). *Encyclopedia of E-Commerce Development, Implementation, and Management* (pp. 496-510).

www.irma-international.org/chapter/navigating-practical-trade-offs-during-prototype-testing/148981/

Introduction to E-Commerce

Mahmud Akhter Shareef, Yogesh K. Dwivedi, Michael D. Williams and Nitish Singh (2009). *Proliferation of the Internet Economy: E-Commerce for Global Adoption, Resistance, and Cultural Evolution* (pp. 1-8).

www.irma-international.org/chapter/introduction-commerce/28191/

Business Relationship Digitization: What Do We Need to Know Before Embarking on Such Activities?

Jari Salo (2006). *Journal of Electronic Commerce in Organizations* (pp. 75-93).

www.irma-international.org/article/business-relationship-digitization/3484/

Customer Loyalty and Electronic Banking: A Conceptual Framework

Daniel Tomiuk and Alain Pinsonneault (2002). *Strategies for eCommerce Success* (pp. 89-109).

www.irma-international.org/chapter/customer-loyalty-electronic-banking/29843/