Chapter 1.10
Integrating E–Supply Networks:
The Need to Manage Information Flows and Develop E–Platforms

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ABSTRACT

The Internet has reached a stage of maturity where its innovative adoption and implementation can be a source of competitive advantage. Supply chains are one of the areas that has reportedly benefited greatly, achieving optimisation through low cost, high efficiency use of the Internet, almost seamlessly linking global supply chains into e-supply networks. This field is still in its academic and practical infancy, and there is a need for more empirical research to build a robust theoretical foundation, which advances our knowledge and understanding. Here, the main aims and objectives are to highlight the importance of information flows in e-supply chains/networks, and the need for their standardisation to facilitate integration, legality, security, and efficiency of operations.

This chapter contributes to the field by recommending a three-stage framework enabling this process through the development of standardised Internet technology platforms (e-platforms), integration requirements and classification of information flows.

INTRODUCTION

The advent of the Internet and its commercial explosion over the past decade has had widespread implications for business and society. The Internet has already had a huge impact on business all over the globe as it has enabled more and more organisations to become networked and share resources. Supply chain management is one of the areas that has reportedly benefited greatly

with lean manufacturing and just-in-time being optimised by the low cost, high efficiency of the Internet to link global supply chains almost seamlessly. Supply chains have been transformed into "integrated value systems" where competitive advantage in the new e-economy can only be achieved through the effective implementation and use of new technologies and strategic integration of these systems (Handfield & Nichols, 2003). This field is still in its academic and practical infancy, and while there has been some research done in the area, it is mainly focused on individual case studies, which tends to be myopic and leads to the production of specific solutions that cannot be easily replicated. There are however many well established software packages that have been implemented in business and are publicised in the annual AMR Research list of 25 major global companies led by DELL, Nokia, and Procter and Gamble (Friscia, O'Marah, & Souza, 2004). From a review of the literature in the field, we argue that there is a need for more empirical research to be gathered to develop a core theoretical foundation and advance the practical application of e-business in supply chain management. By consolidating the major themes emerging from the literature, the importance of information flows in e-supply chains/networks, and the need for their standardisation to facilitate integration, legality, security, and efficiency of operations, is highlighted. This chapter contributes to the field by recommending a three-stage framework enabling this process through the development of standardised Internet technology platforms (e-platforms), integration requirements, and classification of information flows.

BACKGROUND

The rapid evolution and adoption of the Internet over the past decade has had serious implications on businesses. It has, for example, hastened the shortening of product lifecycles; facilitated mass customisation and globalisation of markets; increased further the pressure to reduce costs and increase revenues. At the turn of the century, technology and e-business were identified as being critical areas impacting on the future of supply chains and networks as a result of environmental factors in the 21st century (Monczka & Morgan, 2000). Technology and e-business have been widely predicted to: (a) develop "network" management as the most effective way of managing the changes and increasing complexity of supply chain activities); (b) enable activities of different firms in the supply network to be coordinated); and (c) integrate and consolidate information and systems to deal with globalisation (Gadde & Hakkansson 2001; Monczka et al., 2000). Each of these areas will be dealt with in more detail and aspects of these, will form the fundamental part of the 3 stage framework for standardisation of information flows in supply chains or networks.

E-Business and Supply Chains

There still remains a dearth of research into the role the Internet has across the manufacturing supply chain and its impact on the planning and control operation (Kehoe & Broughton, 1998; Kehoe et al., 2001b). An added complexity is that there is still no consensus on what e-business is specifically and technically (Tassabehji, 2003). In a study of supply chain management in the e-business era, CEO's of organisations identified the urgency of becoming an e-business, but the research could not identify any consensus in what an e-business actually is (Croom, 2001, 2005). This causes problems in terms of standardisation: without a common understanding or definition there can be no standardisation. From the academic literature and reports by practitioners in the field, we can identify three principal categories of e-business applications specifically related to the supply chain. These are electronic marketplaces, inter and intra organisational systems facilitating the flow of goods and services, information com-

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