



Supply-Chain Intelligence in e-Business

Significant technological advances in web-based tools are considered by many organizations to be a primary facilitator for streamlining the supply chains for products and services. Further, the projected growth in B2B and B2C operations has fueled an increasing industry and academic interest in issues which integrate e-business technologies and supply chain activities. Recent examples abound in the industry literature on the successes of alternative technologies that have increased operating supply chain efficiency. For example, real-time auction mechanisms are leading to reductions in procurement costs; switching costs are becoming a smaller consideration for the consumer since search engines have automated the time-consuming search process; and vast amounts of consumer information can be collected and analyzed quickly to realign supply chain operations in real time.

In this newsletter, I have limited the scope of Supply Chain Intelligence (SCI) in eBusiness by focusing primarily on three functional areas: Information Technology, Marketing, and Operations Management. In general, within these three functional/process areas, given the dramatic changes in the ways in which firms will conduct business in the near future, Supply Chain Intelligence in e-Business will fit into one or more of the following categories.

The role of B2B and B2C exchanges in facilitating supply chain activities

B2B (e.g., Covisint) and B2C (e.g., Onsale) exchanges are dramatically changing the manner in which supply chain activities must be structured. For example, auction mechanisms that have been extensively studied in economics are being adapted and customized depending upon the type of digital exchange selected by an organization. Studies relating to the feasibility, efficient operation and implementation of e-business technologies for facilitating supply-chain activities in these exchanges are in progress.

Real-time contractual mechanisms for coordinating supply-chain operations

Contractual mechanisms have been extensively proposed in the operations literature for developing incentive compatible inventory allocation policies. Studies relating to how these mechanisms can be adapted in more complex e-business settings (involving multiple players, multiple products, and real-time control) are in progress.



The changing role of information technology in managing supply chains

In the effective/efficient management of marketing and operations activities related to a supply chain, information technologies will play a critical role. Thus, studies focusing on the development of network architectures, the feasibility of using web-based proxy servers, the pricing of outsourcing (using, for example, application service providers) services, data mining tools and methods, etc. for managing supply chains are in progress.

ERP Systems as integrators of e-business and supply chains

Anecdotal evidence of ERP system implementations tended to be largely positive in the recent past. However, with the rapid changes in electronic marketplace, we are starting to learn about problems with the operation and implementation of such systems. In response to this, most ERP providers seem to be making a concerted effort to adapt their systems to respond to such criticisms (e.g., the development of the Advanced Planning Optimizer Module by SAP). Conceptual, empirical, and field-based studies detailing the critical success factors of ERP systems as integrators of e-business technologies in a supply chain are in progress.

A number of rigorous research methodologies are needed to address problems in each of the above areas. Hence, analytical modeling approaches, theory driven empirical studies, case studies and field research are among the common research methodologies being used to address this stream of research.

I invite your feedback and comments, especially if your organization is involved in any supply chain management initiatives.

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