Aligning Supply Chain Management Characteristics and Interorganizational Information System Types: An Exploratory Study
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Citation: IEEE Transactions on Engineering Management, 49 (3), 2002, 282-292

This research proposes a supply chain management-interorganizational information system (SCM-IOIS) matrix as a framework to investigate the impact of the alignment of IOIS capabilities with the needs of supply chain members.

While there are many ways to characterize supply chains, the type and extent of relationships among members has been thematic. As one moves down the rows of the below matrix, increasingly coordinated supply chain relationships are defined. Examples of supplier management coordination practices are having key suppliers deliver on a JIT basis, using suppliers to manage inventory, and evaluating suppliers on total cost, not unit price. Customer management practices facilitating coordination include customer participation in new product development, customer interaction with production employees, and using customer satisfaction surveys.

Moving to the right through the columns represents increasing levels of IOIS integration. Low integration is defined by electronic linkages between a firm and either its suppliers or its customers. The moderate level of integration represents linkages with both suppliers and customers. High integration is defined by extensive electronic linkages and collaboration among all three partners. Integration might be accomplished through the web or EDI, but the fact that there is integration is thought to be more important than how integration is achieved, and thus the latter issue is not a focus of this paper.

Theory tells us that there is no single “ideal” supply chain relationship that is appropriate for all conditions. Past research leads one to expect that increased IOIS integration facilitates increased coordination, and thus firms will perform better if they are positioned on the diagonal. If the IOIS lacks the capabilities required to meet the needs of the supply chain (e.g., the company is positioned to the left off of the diagonal), there is an inherent inefficiency in the system in terms of timely and appropriate information availability. On the other hand, if IOIS capabilities exceed the needs of the supply chain (e.g., the company is positioned to the right from the diagonal), there is an opportunity cost of over-investment in IT.

Data from the IndustryWeek Census of Manufacturers shows that most firms actually do demonstrate alignment. Although firms that coordinate more with their supply chain and/or achieve higher level of IOIS integration generally improve on delivery, quality, and productivity measures, the benefits are significantly greater for those that move down the diagonal of the matrix. The results imply that firms should invest time and effort in assessing the needs of their supply chain and align their IOIS capabilities accordingly.