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Process Flows and Risk Analysis for the Global E-SMC

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Abstract : With the emergence of the global economy, today's business environment is getting more competitive than ever in the past. And many supply chain (SC) strategies and operations have significantly been altered over the past decade to overcome more complexities and risks imposed onto the global business. First, offshoring and outsourcing are more adopted as operational strategies. Manufacturing continues to move to better locations for enhancing competitiveness. Second, international operations are a challenge to a company's SC system. Third, the products traded in the SC system are not just physical goods, but also digital goods (e.g., software, e-books, music, video materials). There are three main flows involved in fulfilling the activities in the SC system: physical flow, information flow, and financial flow. An advance of the Internet and electronic communication technologies has enabled companies to perform the flows of SC activities in electronic formats, resulting in the advent of an electronic supply chain management (e-SCM) system. A SC system for digital goods is somewhat different from the supply chain system for physical goods. However, it involves many similar or identical SC activities and flows. For example, like the production of physical goods, many third parties are also involved in producing digital goods for the production of components and even final products. This research aims at identifying process flows of both physical and digital goods in a SC system, and then investigating all risk elements involved in the physical, information, and financial flows during the fulfilment of SC activities. There are many risks inherent in the e-SCM system. Some risks may have severe impact on a company's business, and some occur frequently but are not detrimental enough to jeopardize a company. Thus, companies should assess the impact and frequency of those risks, and then prioritize them in terms of their severity, frequency, budget, and time in order to be carefully maintained. We found risks involved in the global trading of physical and digital goods in four different categories: environmental risk, strategic risk, technological risk, and operational risk. And then the significance of those risks was investigated through a survey. The survey asked companies about the frequency and severity of the identified risks. They were also asked whether they had faced those risks in the past. Since the characteristics and supply chain flows of digital goods are varying industry by industry and country by country, it is more meaningful and useful to analyze risks by industry and country. To this end, more data in each industry sector and country should be collected, which could be accomplished in the future research.

Keywords : digital goods, e-SCM, risk analysis, supply chain flows
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