Revisit of Supply Chain Risk Management and Disruption Under the Recent Financial Crisis

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ABSTRACT
Supply chain risk management (SCRM) has increasingly become a more favored research area for academicians and practitioners in recent years. SCRM has been considered an important source of competitive advantage and as an effective method of reducing vulnerability in supply chain systems. Supply chain risk and uncertainty and their related potential losses are becoming much larger as the frequency of natural disasters, political and economic instabilities, and unexpected events is gradually rising up in the past decade. The latest earthquake and the subsequent tsunami in Japan along with the current global economic and financial crisis remind us once again the urgent needs for effective risk management in today’s global supply chains. The purpose of this paper is to contribute to an updated and complete understanding of current research on supply chain risk management (SCRM) in such highly uncertain and unstable natural and economic environments. In addition, we also aimed to provide ideas and identify potential research questions and directions for future research.

Keywords: Financial Crisis, Operations Disruptions, Review, Supply Chain Disruptions, Supply Chain Risk Management (SCRM)

INTRODUCTION
In recent years, supply chain risk management (SCRM) has increasingly become a more favored research area for academicians and practitioners alike. SCRM has been considered as an important source of competitive advantage and as an effective method of reducing vulnerability in supply chain systems. For instance, the International Organization for Standardization (ISO) has made a new set of standards for supply chain management (SCM). These ISO certification programs, namely ISO 28000:2007, are developed to gauge and audit organizational activities that have an impact on supply chain security. It is expected that such certification will enjoy extensive popularity as a sizeable number of organizations expect to see their supply chains incur greater risks in the future (Juttner, 2005).

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Risk leads to disruption of business activities of supply chain members, especially manufacturing firms and distributors, and consequently adversely affects the financial performance of companies involved. Supply chain disruptions can result in various types of problems, including production halt, products stock-out, longer lead-times, increased costs, inability to satisfy demand, and loss of customers. A celebrated example of supply chain disruption is Ericsson’s “Albuquerque Accident” in 2000. A fire in Philips Semiconductor, which supplies cell phone chips to Ericsson, caused a production halt for 3 weeks. The consequences were very severe and led to a total loss of $1.68 billion and 3% of market share for Ericsson (Norman & Jansson, 2004).

The latest earthquake and the subsequent tsunami in March 2011 in Japan have left thousands of people killed and millions have been left without water, electricity, and homes. The disaster has forced many Japanese firms to suspend production and other business activities. Auto production of three major Japanese automobile manufacturers, Toyota, Honda, and Nissan, were all affected by the disruption of supply chains. Indeed, the disaster’s impact spread far beyond Japan. As important suppliers in many industries, Japanese firms’ problems affected many international companies.

General Motors Co. became the first U.S. auto maker to close a factory because of the crisis in Japan. Boeing was also trying to determine how to deal with possible airplane-parts shortages from suppliers in Japan, as nearly one-third of the company’s new 787 Dreamliner came from dozens of Japanese suppliers. In Taiwan, NanYa Printed Circuit Board Co., which reportedly relied on Mitsubishi Gas Chemical of Japan for half of its BT resin supply, tried to seek new sources. In Europe, Volvo Cars, a subsidiary of Zhejiang Geely Holding Group of China, reported that auto parts supplied from Japan can only last for a week and that unless the company can acquire more parts soon, production would be hit significantly. World-wide, companies slowed production or searched for new suppliers to avoid running out of components for which Japan dominates the market.

Japan’s disaster reminds once again the urgent needs for effective risk management in today’s global supply chains. In the past decades, companies have experienced remarkable success achieved through a variety of methods to reduce costs and lead-time, optimize supply base, reduce inventory required, increase plant utilization and productivity, and improve quality. On the one hand, reducing the number of suppliers help to reduce “waste” and streamline operations. On the other hand, it could also create problems if unexpected events happen in the supply chain network. Normal operations could be halted by risk and disruption and it takes time for the affected system to recover if there was no preparation or precaution. Natural disasters, terrorist attacks, political instability, and social movement-caused supply chain risk and uncertainty have significant increased in recent years. Companies that experienced supply chain glitches suffer from declining operational and financial performance and eroding stock value (Hendricks & Singhal, 2005).

Furthermore, the current global economic and financial crisis has swept the entire world in almost every industry and region. Multinational conglomerates, domestic companies, and small businesses are all affected by the harsh economic environment. Companies become increasing vulnerable to risk and disruptions that come from either upstream suppliers, downstream customers, or even both sides. A disruption of business in international supplier or a logistic partner can be detrimental to the already fragile operations of organizations. In addition to large enterprises, Zhou (2012) pointed out that many small and medium-sized businesses have experienced considerable difficulties under the financial and economic crisis. Supply chain risk and uncertainty and their related potential losses are becoming much larger as the frequency of natural disasters, political and economic instabilities, and unexpected events is gradually rising up in the past decade. Strategic outsourcing, globalization, increased reliance on supplier network for cost advantage,
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