

Chapter 75

Evaluating the Risks Associated with Supply Chain Agility of an Enterprise

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ABSTRACT

In the present day, business environment marked by intense competition and uncertainties, the ability of an organization and its supply chain to respond quickly to an unforeseen change in the business environment forms the key to its sustenance in the market. Since an agile supply chain comprises of a plethora of components, it is imperative that there should be a set of uncertainties associated with its functioning. The purpose of this paper is to evaluate a set of critical risks associated with the agility of an organization's supply chain. Identification and prioritization of the risks to assess their relative criticality form the backbone of the research process. This research is expected to aid the decision-makers develop robust risk management strategies as related to their organizational supply chain agility, thereby ensuring their growth and sustainability in the market.

INTRODUCTION

Over the last decade or so, intense competition, constant innovations, and most importantly, huge uncertainties in customer preference leading to shorter life cycle has completely changed the outlook of business enterprises. With the customer requirements becoming extremely uncertain and subjected to sudden fluctuations, enterprises had to shift their business processes towards more innovative methods.

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One of these methods can be stated as being agile, which is the ability of an organization to respond efficiently to unexpected changes in the business environment and meet dynamic customer requirement through effective reconfiguration of its organizational and managerial structure (Deschamps & Nayak, 1995; Ganguly et al., 2009; Mishra & Mahapatra, 2013; Nagel et al., 1991). Therefore, enterprises intending to be agile in nature have to harbor a set of distinguishing characteristics that enables them to deal with these changes - like responsiveness, competency, flexibility/adaptability and quickness/speed (Tseng & Lin, 2011; Yusuf, et al., 1999). A successful implementation of agility can lead to faster, better and cheaper products, all of which leads to customer satisfaction (Dove, 1991; Swafford et al., 2006). As a result, agility has increasingly become an essential component for survival and prosperity of the modern-day enterprises.

A very important component of achieving agility for an enterprise is to effectively synchronize its supply chain in order to take care of the peaks and valleys of customer demand. A supply chain can be defined as “a network of independent or inter dependent business entities collectively responsible for procurement, manufacturing, and distribution activities associated with the manufacturing of a product” (Swaminathan et al., 1998, p. 607). Supply Chain Management (SCM) therefore aids an enterprise to co-ordinate and collaborate with other components of its value chain, all with the intention of achieving the common target of meeting the continually changing customer demand and gaining competitive advantage in the market (Agarwal et al., 2007; Chen, 2015). Enterprises with an agile supply chain can effectively manage their supply and demand according to the sudden changes in the customer demands and in the process deliver better products quickly and that too at a cheaper cost (Da Silveira et al., 2001; Swafford, et al., 2008). An agile supply chain, therefore, is seen as a dominant competitive advantage in the present day business scenario (Jain et al., 2008) and can greatly increase the overall agility competitiveness of the organization.

A strategic issue in supply chain management is the configuration of the network design that has a significant effect on its performance (Pazhani and Ravindran, 2014). Therefore, as the functioning of an enterprise's supply chain requires a complex flow of information, materials, and funds across multiple nodes of the entire chain (Faisal, et al., 2006), it can harbor a plethora of uncertainties. Not addressing the uncertainties properly can lead to a failure in an enterprise's supply chain agility and in turn the overall agility of the enterprise therefore, it is imperative to identify these uncertainties and develop mitigation strategies accordingly. Subsequent ranking of the identified risks in the context of time and cost would further enable the enterprise to assess the relative criticality of the identified risks from the lens of cost and time, and in turn develop risk mitigation strategies accordingly. However, a review of the open literature on risk analysis supply chain agility indicated a gap, and therefore a potential of research pertaining to identification and prioritization of the risks associated with supply chain agility, and that too from a cost and time perspective. This research, therefore, aims to investigate this and intends to shed some light on this important, but not well discussed issue. The aim of this paper is to identify and prioritize a set of risks that might affect the agility of the supply chain of an enterprise. Starting with a review of the theoretical foundation of supply chain agility, the paper goes on to identify and subsequently prioritize a set of critical risks that might be influential in affecting the agility of an organization's supply chain. Conclusions and recommendations are drawn from the research along with providing directions for future research. The paper is expected to provide a twofold contribution in the domain of supply chain management. Firstly, an organization looking towards making their supply chain more agile in nature can consider the set of the identified risks as possible area to address as a part of their risk mitigation strategies. Secondly, the results presented can be used to assess the relative criticality

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