

## Chapter 15

# Supply Chain Risk Management Driven By Action Learning

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### ABSTRACT

*This chapter is the outcome of our consolidated learning on “Supply Chain Risk Management” and “Action Learning in Supply Chains” over a period from 2006 to 2010. We have also published several papers in this domain; please refer to the bibliography section. Although there is a substantial volume of literature on the topic of Supply Chain Management and no lack of coverage today on Risk Management, our motivation was guided by our desire to put into context, both from an academic and Industry perspective, a practical methodology for supply chain risk mitigation based on a proven theory of learning. This methodology will enable industry practitioners of supply chain management to comprehend and act upon risk i.e. identification, assessment, response, monitoring and evaluation. Risk Management in Supply Chain is not a “one-off” transaction but rather an ongoing practice of problem solving and organizational learning i.e. a continuous methodology for sustainable improvement. The methodology provides a means to structure past problems as knowledge to be used by the organization and increase preparedness for facing new challenges. In a global competitive market, successful management of risk in supply chain can be the difference between corporate success and failure.*

### INTRODUCTION

Today’s business environment is characterized by an ever increasing “globalization” and “outsourcing” of production and distribution activities to meet the constraints of product delivery on time

and at the right price to the demanding consumer. Supply Chain management in general and supply chain risk management in particular have become crucial to ensure survival and growth of an enterprise. According to Webster dictionary, “Risk is the possibility of suffering loss”. Therefore, Risk Management is the process which aims to help organizations understand, evaluate and take

DOI: 10.4018/978-1-60960-135-5.ch015

action on all their risks with a view to increasing the probability of their success and reducing the likelihood of failure (ARiMI, 2010). We therefore formulate Risk as follows:

$$R = (I_{ad} * L_{oc}) / P_{ks} \quad (1)$$

Risk (R) is equal to Adverse Impact ( $I_{ad}$ ) multiplied by Likelihood of Occurrence ( $L_{oc}$ ) and moderated by Preparedness in terms of Knowledge and Skills ( $P_{ks}$ ).

Risk management in the supply chain does not equate to disaster response only. Rather, it means keeping an increasingly complex network of autonomous entities working efficiently with the objective of fulfilling customer orders and reporting a bottom-line profit for the organization. In the short term, slippages in supply chain performance will have an adverse impact on financials. However, in the long term, if such slippages persist frequently, it may jeopardize the company's future as customers look for alternative sources or shift to using substitute parts.

Organizational learning provides not only protection against slippages in supply chain performance but also ensures preparedness to face challenges that have not been experienced before e.g. changes in financial markets, shifts in consumer demand, weather, terrorism, epidemic outbreaks and so on. Action Learning is a form of organizational learning that ensures continuity of process knowledge creation and application. In this context, the supply chain has an operational breadth and depth that is broad in scope, involving senior managers right down to delivery personnel. It is the delivery and service personnel in the supply chain that are customer facing and therefore need to be involved in the learning as well. It is for this reason that action learning is a key candidate as a driver for supply chain risk management.

Our findings suggest that the action learning methodology proposed is a useful tool to educate and guide managers involved in supply chain op-

erations, on the 4 main process flows, interactions and relationships. This knowledge will empower the manager to determine a course of action that will be most appropriate for; (i) addressing the problem at hand, (ii) understanding the impact of his actions on the related process flow, (iii) communicating the same to all other parties involved in a structured manner.

In order to contextualize our research it is important to highlight several areas which we explicitly *excluded*, as it is not the objective of this paper to provide specific solutions to all types and aspects of risk in supply chain operations.

Firstly, this paper is not about a method for supply chain performance or maturity level measurement, as this has been sufficiently addressed in the current literature on supply chain (de Waart, 2006; Geary, Childerhouse & Towill, 2002). Secondly, we also do not address the development of mathematical or quantitative models, particularly because we found that most managers involved in risk mitigation in the sites we studied were not willing to go beyond their existing knowledge of Excel Spreadsheets (rachan, 2007). It is for the same reason that this paper is not about advanced SCM design and planning optimization algorithms (Tang, 2006).

Finally, we did not propose a Strategic, Operational and Tactical approach to risk mitigations (Juttner, Peck & Christopher, 2003). Supply chain management has remained challenging because unlike an organization, such networks not only have a large number of concurrent components (Suppliers, Entities, Plants, Distribution Centers, Shipment agencies, and so on), but these components can interact asynchronously to create an exponential number of possible outcomes. There is no CEO who owns the supply chain from end-to-end like an enterprise. The need to coordinate the behavior of these autonomous entities to maintain coherence in the network adds considerable complexity. Such coordination involves *dynamic temporal relations* between *events* occurring at *different entities* (Peterson, Mannix, Tuttle &

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