

Risk Assessment and Management in the Risk Management of the Supply Chain

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Abstract:

Purpose: *The ambition of this paper is to manage the risks at global and consistent chain of supply.*

Methodology: *The review method is used in this paper for managing the risk in supply chain.*

Finding: *The Supply chain risks can be handled by applying supply chain process correctly: risk controlling, risk planning, risk evaluation etc.*

Originality/Value: *The supply chain risk management is a very necessary topic at a global level; in this paper it is given complete sense and guidance for securing it.*

Key words: supply chain and risk management

Introduction:

The intensification of competitive global supply chains is a longer and more complex process. Supply Chain (SC) is not a function especially with the increasing failure of supply chain. Thus, this is a significant reduction of business planning and development, emergency planning and its original architectural design or re-chains. Organizations need to understand a number of the units and the identification of potential risks,

risk and impact resistance risk. Any action to prevent the development of the plan is not possible, if that includes specific threat and control. Supply chain and other shock acerbity of the supply chain failures have been recalled earlier application and demonstrated in small cars (Story 2007) and pets (FDA 2008).

This can increase the vulnerability to risk in supply chain by increasing the use of outsourcing of manufactures, globalization of suppliers' base, reduction of suppliers base, shorter product life cycles.

According to Souter (2000), the industry or companies should not focus on themselves while there is risk. They should focus on their links of supply chains. According to Lambert and Cooper (2000) and Mentzer et al. (2001), a key component for supply chain management is shortening both risk and reward between the members of supply chains. There is a solid need to understand the supply chains and their risk factors, their livelihood, importance and hardness. Risk management helps to avoid the problems. The risk is involved in supply chains and cause failure, which can be determined through environment.

The purpose of this paper is to show the image and to understand the problems created by risk in supply chains, how these can be manage and taken care of. The different methods used in supply chain management are detected through the review papers consulted. Secondly, according to the current literature there has been no study conducted in which such a model is being studied. Thirdly this study has been conducted in the context of Pakistan where it has not been conducted before. This study would hence help students to have further explanation on how to continuously improve by application of a model of risk management which leads to developing entrepreneurial skills in SCM.

Literature review

Supply chain risk management:

Analyzing risk is to determine all those things that keep outcomes away from perfect results and perfect way (Manuj 2007; Mentzer 2007).

Supply chain is defined as a group of methods used to integrate efficiently suppliers, manufacturers, stores and warehouses so that merchandise is produced and distributed in the right quantities at the right places and at the right time in order to minimize system costs and service level requirements satisfactorily. Or it can be defined as all activities associated with the flow and transformation of goods from raw materials to end users.

The term Supply Chain refers to the entire network of companies working together to design, manufacture, deliver, and service products. The global supply chains are becoming wider and more wanted. A supply chain is affected by potential risks which are causing a failure in supply chain. The firms are developing new and fast supply chain methods, which can save the supply chain from a failure. The supply chain may face problems of labour, energy price and natural disasters. Mainly it is affected by energy price, potential instability, input cost increase, or utility failure and many other like that. The SCRM is introduced for the aim of risk control. It can save from the effects of risks and develop well in the global works. Hence the supply chain vulnerability (Svansson 2000, Christopher et al. 2002) increases and will increase further if outsourcing companies become dependent on another organization. Risks in supply chain increase under the following circumstances:

- The increased use of outsourcing manufacturing and R & D supply.
- Worldwide chain of supply chain.
- Minimization of momentary paltry.

The supply chain risk management process:

The risk is of different types and it needs different processes to save from it. As in Table 1 the different types of risk are shown.

The SCRM processes are used: risk measurement, risk identification, risk evaluation and risk assessment, risk planning etc.

Type of risk	Source
Supply risk	Quality issues, technology uncertainty etc.
Operational risk	Breakdown of operation or changes etc.
Demand risk	New product introduction etc.
Security risk	Information system risk, crime and sabotage.
Policy risk	Action of national government like restriction.
Disruption risk	Natural disaster, terrorism and wars etc.
Transport risk	Late delivery , port strike etc.

Risk identification:

Risk identification refers to risk awareness, identifying deficiencies, and recognizing the negative effects and the safety of other risks (Chopra and Shodi 2004).

Risk measurement:

Risk measurement is used to measure the risk potential and the threats from it. As it is define by Crockforord (1986), it is the manner in which or the extent to which the threats truly affect upon the resources. Loss or damage to judgment, loss of cash, cost overwhelm, schedule problems, poor growth etc. can be present.

Risk assessment and evaluation:

These refer to the description and quantification of the risk estimate probabilities, estimate the risk, risk acceptance and acceptability, cost-benefit analysis.

Risk planning:

When risk is identified then different plans are used for those

risks. The risk planning can save us from the loss of cost and give us a benefit (Chopra and Shodi 2004).

Risk analysis and uncertainty:

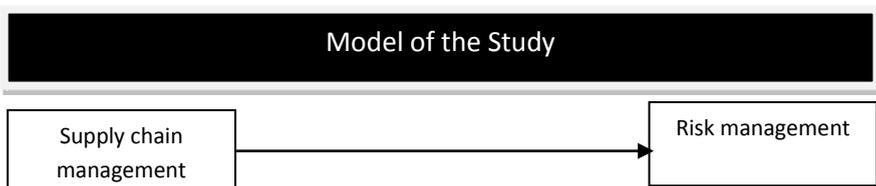
This examines the SC structure, appropriate work measurement and authority and it also focuses on the most important things that identify the risk source.

Link between supply chain risk management and process:

Supply chain risk can be handled more adequately in the implementation of the risk management process chain. The structured approach can be divided into risk measurement, assessment, identification, evaluation, planning and analysis of uncertainty monitoring systems. The proposed technique is to perform this procedure. The proposed risk management supply chain is a tool to provide management with useful information about risk and strategic supply chain in different situations and it tells us how to take the correct decision.

Methodology:

The method of reviewing papers was selected to collect the primary data for this study. The papers were studied and compared to have the best method for it. Five to six papers were used for the comparison, these being compared on the basis of different risks and how to be saved from the problem. The model will show the supply chain and risk management. This study will give a clear view of it and how to identify the risks and manage them. Both risk and supply chain management are discussed in the literature and compared with other papers.



Discussion:

There are different paper summaries for the comparison, in order to have the best results:

1: A semiconductor market exceeded 250 billion dollars on the globe in 2010 and took it to double digit compound annual growth rate in last 20 years. As it is located for upstream of electronic product market, the semiconductor industry has suffered from the bullwhip effect. Therefore, effective e-based supply chain management has become imperative for the efficient operation of semiconductor companies. The objective of this system was to improve results, which were 6-7 percent improved by e-based supply chain and error was 8 times decreased. It was applied by two companies, ASE & TSMC. ("Key success factor analysis for e-SCM project implementation and a case study in semiconductor manufactures." Bang-ning Hawing and Ta-ping lu)

2: The risk is measured on the background of food safety risk in an abroad harbor. The authors identified six risk components which were creepy, erect effect, controllable, adjustment and past experience and five risk minimizing strategies that would be used by travelers: travel instruction, safety assertion, target prestige, selling action and protection together with ambiguity and consequence. The research was focused only on the safety of food.

Risk measure provides a quantitative basis for academic inquiry and copying in travel and tourism and can be used to develop tools to assess the social and economic shock on traveler approach of the risk of international travel to the host society; it also makes the basis for the development and calculation of risks. ("Risk measurement framework - an extension and validation of food safety risk in international travel destination." Ruth M.W Young & Wallace M.Syee)

3: Risk management of the supply chain is becoming increasingly important so that the effect thereof increases. A

fire at a supplier with a big stock of Ericson established a new organization and new tools and processes for the management process of the supply chain. The method described attempts to analyze, assess and manage risk sources along the supply chain. The authors claim that insurance companies could be a driving force to improve the process of risk management in the supply chain, as they now began to understand the deleterious effect of the current supply chain. The report examined the risks associated with the planning concept, which is traditionally the time, cost and quality, disagreeing that the risk of the supply chain will also be placed on the market outside the analysis in the calculation of new planning solutions. This is not to minimize the risks, but finding effective level of risk and prevention (“Ericson proactive supply chain risk management approach after a serious sub-supplier accident.” Andreas Norman & U.L.F. Jansson)

4: Officers must in many supply chain risks a more competitive environment to manage. Commonly this implies buffering against ambiguity which sub-optimized practical work. Risk management can be a direct method to deal with the troubles by recognizing hidden losses. This study provides a conceptual factor, which implies at the state level technical products, security needs, the relative importance of the supplier and the purchaser's prior experience with the situation considered in the determination of risk management in the supply chain. This can prevent unexpected losses and leads to a better place. (“Securing the upstream supply chain: A risk management approach.” Larry C. Giunipero and Rehan Aly Eltantawy)

5: This study refers to the tools adopted to manage information flow, material flow, and cost. Performance in supply chain is to achieve high overall performance managing risk. Supply chain management tools are to improve the efficiency of information sharing between supply chain participants and to smooth material flow carried out by the

parties in collaboration. Cost management and performance assessment tools, and profit realized by the company as well as the entire supply chain are described. When constructing the research model they try to find and verify the linkage between the tools supply chain use for coordination and for managing risk plus the performance achieved. (“How risk management in supply chain affects supply chain performance.” Tudit Nagy & Lorant Venter)

All the above five summaries tell us about supply chain risk management process and ways to be used to identify the risk either by policy, tools or using different methods.

Recommendations and particular implications:

Following are the recommendations drawn from the discussion of this study:

- Managers should focus on equal and equitable pays structure in their organization so that employees can be rewarded well in comparison to the market.
- The manager should have discussions and share ideas of the workers related to how the risk can be reduced.
- The organization should use the best tools to prevent the risk.
- The workers should be trained enough to understand about the risk and identify them in order to have profit.
- The organization should do evaluation to have the fixed ratio of risk and manage the best supply chain management.
- The companies should use both the supply chain and E-supply chain management in order to have best results.
- The companies should create a staff to check and verify the supply chain risk management.
- The company should check the environment and other aspects which are causing failure in the results of supply chain. This will help them to reduce the percentage of

failure.

- The company should use different methods for supplying chain management, such as discussed above.

Limitations and future research:

This study carried some limitations with it. One of the major limitations of the study is that the sample size of the study was not large enough. Future research is directed to have a larger sample in order to study such a relationship. Another limitation of the study was the time and resource shortage due to which data was not collected from a diverse set of organizations from all fields of life. Future studies should collect data from a much diverse set of organizations. In addition the research was limited to two variables only. Future studies should include more variables in this model such as risk tools, e-supply chain and other case study etc. Lastly the data was collected from the different papers and articles, future research should conduct the study in different contexts in order to increase its generalizability to a much wider context.

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