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Supply Chain Risk and Flexibility

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Abstract

Primary function of supply chain is to take products from creation to delivery, but it can provide a competitive advantage within your industry & with your customers as well. It can make your customers loyal for life time & satisfy demands of customers in a very efficient way. The main objective of supply chain is to create visibility, reducing waste, streamlining the whole process, reducing errors & duplications. It is very important to measure the risk of supply chain. Otherwise it is not possible to make an agile supply chain system that could response to change to any circumstances. Supply chain system must be flexible and agile to cater the demand of new economy.

Keywords: Risk, Supply Chain, Flexibility, Customers

INTRODUCTION

From beginning to end supply chain offers opportunities to spread head innovation, maximize the capability of the organization, boosts bottom line & positively impact the customer's experience with your products & brands. Supply chain here can be used to create brand identity & brand re call will be high. Thus it helps to create brand equity which is reflected in balance sheet of the organization [1].

Why Risk Measurement is Important?

- It measures to identify holdups & inefficiencies.
- It makes information flow faster.
- It helps management to take faster decision based on real time.
- It makes consumer delivery system efficient & effective.
- It reduces the cost of inventory.
- Most importantly it reduces the cost of production.
- Risk analysis can be done to identify, describe, quantify and manage uncertainty.
- Risk analysis is carried out to find out the consequences.
- It is to quantify value or cost.
- Risk analysis is done to choose competing course of action.
- Tools depend on the nature of the problem.
- Decision tree is used to carry out analysis.
- Monte Carlo simulation technique is being used.
- Decision tree is visual model consisting of nodes and branches.
- At the end of initial branches, there could be either end nodes or uncettanttity nodes.
- Its important to identify flexibility enablers.
- Need to understand the influence of flexibility enablers on global supply chain.
- Various enablers are used to design flexibility management.
- Enablers are strategic, operational and performance based.

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- ISM model is used to determine mutual relationships.
- Some enablers have high driving power and low dependency.
- Operation and performance based enablers need less attention.
- Internal enablers need respond on global uncertainties.

Key Features of Flexible Supply Chain System [2]

- Supply chain needs to maintain customer service level.
- Flexibility is important to maintain customer service level.
- Its very important to measure sudden changes in demand.
- A flexible system needs multiple dimensions.
- Flexibility can be operation al, tactical and strategic.
- Flexibility is used to cope up with various uncertainties.
- Concept of flexibility has gained more importance in recent time in context of global supply chain.
- Supply chain flexibility is very important in case of manufacturing organizations.
- Supply chain flexibility can be product development flexibility, manufacturing flexibility, sourcing flexibility, logistics flexibility and information flexibility.
- Flexibility is most important in global supply chain.
- Flexibility enabler's drive supply chain process.
- Flexibility is the derivative of global supply chain.
- Strategic level enablers drive operational level enablers.
- Operational level enablers drive performance enablers.
- Some enablers have closed loop relationships and drive each others.
- Logistics flexibility might be defined as flow of materials, semi finished goods, finished goods, information's etc.
- Many models are developed to address the issues of flexibility.
- It is important to measure the importance of supply chain flexibility drivers.
- All the dimensions of flexibility need to be addressed through structured questionnaires.
- Analytic hierarchy process is used to calculate to measure flexibility of supply chain process.
- FMEA technique is used for flexibility evaluation.
- Simulation technique is used to investigate the nature of distributed supply chain process.
- Simulation technique is also used to measure the quality of flexibility.
- Its important to measure the degree of flexibility on planning performance.
- Leaner programming is used to maximize the demand under certain production capacity.

Trends in Supply Chain [3]

- Analytics is being used in supply chain in a better ways.
- The world is moving towards digitization and supply chain is going to digital.
- Data analytics is going to play a major role supply chain analytics.
- It is about cloud computing in supply chain.
- Artificial intelligence is being used in supply chain.
- Sustainability is the key factor in business and supply chain is going to be a sustainability factor in that.
- Lean and agile supply chain is most important factor.
- IOT is an issue that will govern future of supply chain.
- 3rd party logistics and out sourcing is a key factor in today's supply chain.
- Supply chain is a competitive edge for organization.
- An efficient supply chain will drastically reduce the cost of production.
- Inventory management must be optimum to reduce cost.

Challenges [4]

- Cost and pricing pressure is evident in supply chain management. Designing supply chain network is difficult. Supply chain sustainability is a problem all over the world. Supply chain can give competitive advantage. Multiple channels create problems in supply chain process. Seasonal volatility and others disruptions create problem in supply chain. Demand and supply mismatch create problems. Risk management is a key issue in supply chain management. Speed and quality governs supply chain process. Designing efficient network is very difficult.

Value Proposition

- Value optimization rather than maximization. Must not be differences among customer, partners and stakeholder expectations. Value creation task is for long term, medium and short terms. Stake holder's value builders are planning concern. Customer expectations vary from industry and customers. It is utmost important to manage customer expectation response. Value builder takes a longer view. Essential to identify the customer value drivers. Need to analysis competitive possibility positions. Should not be any over laps in customer expectations. Sony walkman is a classic example that is based on mobility. Internet and telecommunication offers new possibilities. Supply chain has a new dimension in the age of ecommerce. New ways of business transaction is emerging. Ecommerce is changing relationships of business partners. Supply chain is going to get more importance in near future. Ecommerce supply chain is very important OEM. Analytics and data science is going to play a pivotal role. Supply chain is going to reduce coordination cost. Consumer to consumer business is increasing. Information logistics is going to rise. Physical logistics will be less in future periods of time.

Supply Chain Management System will Make Supply Chain Network more Efficient.

"In commerce, supply chain management (SCM), the management of the flow of goods and services, between businesses and locations, and includes the movement & storage of raw materials, work-in-process inventory, and finished goods as well as the end to end order fulfillment from the point of origin to the point of consumption. Interconnected, interrelated or interlinked networks, channels and node businesses combine in the provision of products and services required by end customers in a supply chain [5]".

Why Supply Chain Management essential for any manufacturing or services organization? SCM helps an organization to streamline the process. Think about a retail shop. If they implement supply chain management, they can effectively track their sale -> inventory -> reordering resulting in optimal utilization of resource and capital. Think about a software product development organization here using SCM; they can optimize human resource utilization and manage important milestones, resulting in lower risk in budget overrun.

Components Involved in Traditional SCM

Planning or Strategy: Plan and manage all resources required to meet customer demand for a company's product or service. When the supply chain is established, determine metrics to measure whether the supply chain is efficient, effective, delivers value to customers and meets company goals.

Sourcing (raw material or Services): Choose suppliers to provide the goods and services needed to create the product. Then, establish processes to monitor and manage supplier relationships. Key processes include: ordering, receiving, managing inventory and authorizing supplier payments.

Manufacturing: Organize the activities required to accept raw materials, manufacture/develop the product, quality test, the package for shipping (not relevant for service industry) and schedule for delivery.

Delivery and Logistics: Coordinate customer orders, schedule deliveries, dispatch loads, invoice customers, and receive payments.

Returning: Create a network or process to take back defective, excess or unwanted products. For the Software Service industry–this involved post-production defect tracking and rectification and initial bug-fix.

Green Supply Chain & Its Global Impact

Tremendous growth in global competitiveness over the last few decades, companies all over the world now taking steps ahead of competition in producing highest quality of products & services. Organizations are doing this to be a part of environmental friendly organization. This gives organizations a competitive edge over other [6].

Green supply chain gives a competitive edge over other in 21st century as socially responsible organization. So the drivers of green initiative of organizations are many & they are continuously trying to develop new and innovative ways to achieve more & more improvement. In their environmental performance.

Reverse Logistics & Reverse Supply Chain

Reverse supply chain is very important as it has got immense importance in total supply chain process. Reverse supply chain is as important as forward supply chain system. Organizations often do mistake in delivering the product to right consumer or making a perfect product for the customers. In this case reverse supply chain plays an important role. Sometimes organizations want to take back.

The products that has been delivered to the customers. The company deals with the collection & reprocessing of used products, the return of the materials, components & parts & bringing them back to the supply chain.

In Asia, many manufacturers are themselves paying attention to developing strategies for reduction of hazardous, toxic, other unhealthy & non environmental friendly components of their products they use. These hazardous components must be withdrawn through reverse supply chain process.

CONCLUSION

A proper & efficient supply chain management system is required for the organizations to survive in this dynamic era. Supply chain management system has got strategic importance regarding all areas including purchasing, warehousing etc. An agile supply chain framework can reduce time in all process areas & increase productivity. Thus supply chain management system can be used a competitive tool in this dynamic era. So it is mandatory to measure the risk involved in supply chain system and make it flexible enough to adopt changes.

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