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Supply Chain in 21st Century

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Abstract

Supply chain is competitive tool for all organizations in present time. Supply chain is becoming important for all organization. Paradigm has been changed. Agile supply chain is becoming more important and it is question of survival for organization to make best bread of supply chain to survive in this competitive and dynamic business world. Supply chain dynamics is going to be changed as we are approaching towards a new world order. The supply chain term implies leaner structure, but it is quite misleading. Supply chain network and structure is not leaner and the term is quite misleading. Leaner structure deals with idealized scenario. Real world shows a different scenario. Technologies are being used to make supply chain process better, smoother and more competitive. Analytics and data science is going to change the total dynamics of the supply chain industry.Supply chain is one of the important modern-day approaches of a cost-effective organization. It looks at a proactive approach along with best Practices and aims at reducing overall costs and indirectly improving the bottom line. A paradigm shift in dealing with vendors helps in moving the supply chain operations to a world-class level.

Keywords: Supply Chain, Agile, organization, Global, Technologies.

INTRODUCTION

An efficient Supply chain can reduce the overall cost of the organization. It looks at a proactive approach along with best Practices and aims at reducing overall costs. It indirectly improves the bottom line. A paradigm shift is happening in supply chain management process [1].

Supply Chain Umbrella [2]

- Purchasing: it is referred as one of the most impotent & central activities of supply chain.
- Demand & Supply planning: supply planning is process of taking demand data and developing supply, production & logistics network.
- Quality Control: organizations understand the importance of supplier quality and its growing since last 20 years.
- Inventory Control: it has got different meaning to different organizations. But it refers sourcing, managing and releasing materials.
- Inbound & Out bound operations: Organizations links between customers & supplier with having specialized traffic & transportation system.
- Warehousing & Distribution: before product reach to customer, it should be stored. Hence warehousing & distribution plays an important role.

SCM in Global Context [3]

- A global company is more than a multinational company
- Business materials & components are sourced worldwide.

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- Most markets are dominated by global companies.
- Supply chain & logistics is a central issue for global organizations.
- Cost reduction is an important factor.
- Handling assembly operation is important.
- Building value chain through supply chain.

Trends in SupplyChain [4]

- Global sourcing
- Long term supplier relationship.
- Total cost ownership
- External integration & Risk.
- Cost reduction.
- Out sourcing.
- Agile operation.

Uncertainty

We find many bottlenecks in supply chain process. It could be travel times, breakdowns of machines and vehicles, Weather, natural catastrophe, local politics, labor conditions or international issues. Uncertainty could be related with

- Minimize internal costs
- Minimize uncertainty
- Dealing with remaining uncertainty

Why SCM is Important? [5]

- If you don't make your supply chain management system efficient, your competitor will do it
- Organizations need to match demand and supply of their products or services.
- To reduce overall cost of the organization through an efficient supply chain management system.
- Organizations are using multiple soft wares to improve their supply chain management system.

Forecasting plays an important role in SCM

- Strategic Advantage–It Can Drive Strategy
- Manufacturing is becoming more efficient
- SCM offers opportunity for differentiation (Dell) or cost reduction (Wal-Mart)

Analytics is a data driven decision making process. It is based on relevant and trusted data. It uses visualization tools in from of graphs, charts and other methods. Supply chain generates huge amount of data in process. Analytics is used to uncover patterns and generates insights.

- Supply chain analytics can be applied in cognitive technologies such as artificial intelligence or AI in supply chain process. Artificial intelligence can understand, learn and interact like human, but at much higher capacity and speed. More advanced form of supply chain analytics is about supply chain optimization. It can handle large amounts of data and help the organization for forecasting for demand. It also helps in innovation, satisfying customer in a better way and identifying gap areas. World economy is very dynamic & many rules, regulations are being introduced. Supply chain analytics is very important [6].
- To keep up with ever changing trade rules and regulations.
- Maintaining flow of goods.
- Analytics software can capture huge data & analyze
- It helps in better forecasting.
- Supply chain analytics focus on future trend

Supply Chain Planning

- Demand planning: Demand planner provides statistical methods with all factors and inputs from management. Data can be integrated and different views of demand data can be drawn. Furthermore OLAP tool enables enable efficient access to relevant data [7].
- Supply chain planner: Supply Chain enables modeling and optimizing supply chains with respect to materials, capacity, transportation and customer service.
- Demand fulfillment: Demand fulfillment generates constraint driven plans and offers supply chain wide variety of finished goods.
- Factory planner: Factory planner generates optimized production plans by scheduling backward from requirement date and scheduling forward from current date.
- Production & Distribution Planning: Its main focus on mid tern master planning including procurement, including Procurement, production and distribution planning. In many cases, linear programming and some other heuristics are applied.
- Demand planning: Demand planning needs sophisticated forecasting method like exponential smoothing and ARIMA as well as tools to combine these methods like Bayesian forecasting and analyze various factors, marketing campaign.
- Production scheduling: Production scheduling is especially designed for continuous production process. However, it is dedicated to multi level supply Chains with floating bottlenecks.

Vehicle loading: It addresses short term transportation problems, especially the Choice of transportation modes and designing shipping dates.

Supply chain management software ensures that you always have the right amount of product and material to satisfy your customers. Automating the process will help to keep your manufacturing or distribution business in budget and efficient [8].

Functions of SCM Software

- Integrated business planning
- Demand forecasting and management
- Inventory optimization
- Sales and operations planning
- Response and supply planning
- Supply chain collaboration
- Partner and supplier collaboration
- Dashboards for status monitoring
- Rapid on boarding functionality
- Enhanced compliance

Aggregate Planning

- Establish a product mix
- Establish a technology frame work(related to product mix)
- Identifying market & out lets
- Forecasting demand
- Planning for production
- Plan for quality control
- Distribution planning
- Providing infrastructure
- Production system

Supply Chain Strategy

Strategy is the direction and scope of the organization over the long term which achieves advantage for the organization through its configuration of resources and increasing the capabilities of the organization.

The Role of Business Strategy

Creating a business plan is often important particularly if we need finance or we do not have experience of running business.

Supply Chain Strategy

Supply chain operations are controlled to reduce cost. Supply chain strategy is broader concept. Supply chain strategy is an interactive process that evaluates cost-benefits tradeoffs of operational components [9].

Select a chain that may include product/service/materials that need improvement in cycle or response time.

Design a team: include all parties inside &outside the company, especially other members of supply chain such as suppliers, customers, third party service providers.

Map the chain as a team: entire chain does not need to be mapped in details if we are focusing only on particular parts of it or else need to focus on entire chain [10].

Supply Chain Design Process

- Total cost to quality
- Cycle time
- Reliability

Specific product performance

Political

- Environmental protection law.
- Taxation policy.
- Foreign trade regulation.
- Government stability
- Employment law
- Monopolies regulation.

Economics

- Business cycle, interest rate
- Money supply, inflation
- Unemployment
- Disposable income
- Energy availability & cost

Socio–cultural

- Population demographics
- Income distribution
- Social mobility
- Consumerism & level of education.

Technological

- Government spending on research
- Government focus on technological effort
- New discoveries/development
- Speed of technology transfer
- Rates of obsolesce

CONCLUSION

Supply chain management is a dynamic concept and it is changing in present context. Lots of disruptive technologies are playing important role in supply chain management system. An efficient Supply chain management system has got strategic importance regarding all areas including purchasing, warehousing etc. Organizations need to new breed of supply chain to meet the demands of 21st century. We are approaching towards the era of uncertainty and business environment is becoming more dynamic. So supply chain management system needs to be more agile and adaptive in nature.

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