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Paradigm shift in Supply Chain – Post Pandemic Era.

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Abstract

Many organizations lost its importance and performance during covid period. Supply chain of many organizations became totally defunct. Even financial supply chain also was not working and finance got stuck across the world. Now we need to design the supply chain and supply chain network in a new way. So we can defend any situation in future. In the 1940s and 1950s, the focus was into material handling in labor intensive operations and making better use of available resource. In 1980 the total focus shifted in to supply chain management and it's a sea change in total approach. But after pandemic the total scenario has been changed and we need to think to design the supply chain network in a totally new ways. Efficient supply chain management system should be agile, adaptive and can respond to changes arising out of any situation. Supply chain has got influence on people & society at large. These are socio-economic issues like local poverty elevation, supplying essentials commodities in emergency time; marginalization or unemployment issue etc. supply chain could contribute towards to the development of community & enhancement of the quality of members of community. In global operation organizations often encounter stiff competition & in order to have competitive pricing, they force supplier to bring down the cost. It has been noticed that supplies are forced to bring down their cost and thus they pay lower wages to the people involved in supply chain operations. 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. Let's consider a software service organization. They are bidding for a project, and finally, the client awarded the order to them. Now, what all they need to do? They need to plan for resource planning. Will they onboard all the resources (solution architect, business analyst, designer, programmer, tester, deployment team) together? For sure, they will not. Now, there is another challenge. Resources with different skill sets have different hiring time and different learning curve to become productive. Here SCM can play a crucial role to prepare an optimal project plan. It can help the software firm decide when to onboard which type of resource and when they can be released, resulting in optimal budget management and profitability.

Keywords: Supply chain software, Supply chain Analytics, strategic sourcing, value chain, strategic purchasing, reverse supply chain

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INTRODUCTION

First, let's go with the definition mentioned in Wikipedia. A supply chain is a system within organizations, people, activities, information, and resources involved in supplying a product or service to a consumer. But we cannot limit ourselves within the boundaries of this definition mentioned above. We need to go much deeper and need to understand the significance of supply chain management system.

For the Service industry – it helps the organization to have a robust and smooth process. According to CIO.COM, the following are three scenarios where effective supply chain management increases the value of the entire cycle.

1. Identify the Potential Problem
2. Price Optimization.
3. Improving inventory management system.

Supply chain is a competitive tool & it can be a completive advantage for the organizations. In global perspective, supply chain gained importance long back. It was bit late in Indian perspective & late 90's supply chain gained importance. During covid-19 pandemic across the world, numerous problems have emerged. Consumers are suffering most as communication & transportation is on halt. Products & services are not reaching to customers in proper time with suitable price. Cost of production is spiking up & finance is stuck across the world. Disposable income is lower end. In this condition supply chain plays a big & important role to satisfy consumers & gain a sustainable competitive advantage for the organizations.

Supply chain offers opportunities to spread 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.

Industry Scenario Before 1980

In the 1940s and 1950s, the focus was into material handling in labor intensive operations and making better use of available resource. In 1980 the total focus shifted in to supply chain management and it's a sea change in total approach. But after pandemic the total scenario has been changed and we need to think to design the supply chain network in a totally new ways.

TRENDS OF SUPPLY CHAIN AFTER PANDEMIC

- Global sourcing
- Long term supplier relationship.
- Potential Remedies:
    - Organizations need to reduce replenishment lead times by taking advantage of modern computer-assisted ordering technologies and adopting electronic data interchange technology. [1]
    - We need to use various supply chain software and need to apply the analytics tools to make supply chain process more smooth and responsive.

ANALYTICS IN SUPPLY CHAIN

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. Many organizations are using supply chain analytics tools to improve the efficiency of supply chain management process. We are now using AI, Machine learning and others analytics tools in supply chain system.

World economy is very dynamic & many rules, regulations are being introduced. Supply chain analytics is very important regarding

- 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.

Using Analytics

- Preparing changes down line
- How to use resources efficiently.
- Machine learning and artificial intelligence is very useful.
- Analytics tools help to take automatic action in case of emergency.

Why Are Supply Chain Analytics is Important?

- High return on investment
- Better risks measurement
- High accuracy in planning
- Achieve the lean supply chain
- Futuristic approach

Changes in the Practice

- Earlier ERP and SCM platforms were used.
- Physical documents or spreadsheets were common
- Forecasting and demand planning were difficult.
- Communication becomes much faster and effective.
- Accuracy in planning and forecasting

Supply Chain Planning Post Pandemic Era

Supplier evaluation

Large supplier base or inefficient suppliers create bottle neck in organization.[2]

It's important to rationalize suppliers if there are the suppliers who are not efficient.Rover is famous car manufacturer in Europe and has got more than 2000 suppliers.But they reduced to 500 suppliers who are supplying whole system of components. Supplier development and supplier management program has to be introduced.[3]

Supply Chain Design Process

- Total cost to quality
- Cycle time
- Reliability

Supply chain risk and network management

Shared risk:

The risk that is external to the organization, but inside supply chain. Basically it's a risk from customers and suppliers [4]. These risks arise from-

1) *Integration risk* from cooperation and include information flows, payment flows, liability, forecasting and planning.
2) *External risk:* The risk that is external to the supply chain network and arises out from the interaction with environment. Supply chain network is vulnerable to its own risk and risk to the other members of supply chain. It is also prone to the risk from outside environment.
3) *Transmitted risk:* the risk is transmitted through supply chain to its all supply chain partners. It might occur that risk is transmitted from one organization to another organization through its supply chain network.
4) *Strategic view:* supply chain network risk management needs attention from top and it's a strategic matter to consider.[5] In short, if there is poor supply chain, network risk management, the organization might not stay long as profitable.
5) *Risk in design:* managers should include risk in their decision making process. In many cases, managers focus on leanness, efficiency and other issues. But risk is inherent in the network design. So it needs proper attention.

Supply chain uncertainty can be of two types.

Supply chain risk can be of two types – risk within the system and risk which is outside the system. [6] Both these types of risks must be adjusted to make the process more efficient.

Supply chain network plays an important role to deliver goods from one point to another point Supply chain network must be designed to the tune of organization's strategy and business environment. In spite of that, supply chain network is not flexible in some organization and they blame organizational latency. It means that organizations are not able to root out their problems. Latency comes from various technical resources and supply chain network structure. South East Asian organizations keep their distribution base united states to reduce the cost. Supply chain flexibility can be achieved through reducing cycle time. Supply chain network structure needs to implement pull based system. Need to create and maintain global supplier relationships.

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. [7]

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.

IMPACT ON SOCIAL SUSTAINABILITY

Supply chain has got influence on people & society at large. [8] These are socio-economic issues like local poverty elevation, supplying essentials commodities in emergency time; marginalization or unemployment issue etc. supply chain could contribute towards to the development of community & enhancement of the quality of members of community [9]. In global operation organizations often encounter stiff competition & in order to have competitive pricing, they force supplier to bring down the cost. It has been noticed that supplies are forced to bring down their cost and thus they pay lower wages to the people involved in supply chain operations. It has got a deep impact on poverty elevation program of supply chain organizations. An efficient supply chain will reduce the cost of production, operation & product should reach to the customer within minimum possible time in least cost. But people who are involved in supply chain process should not be paid lower wages as it has got socio – economic importance.

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

Alignment

Supply chain policies must be aligned to the policies of the organization. Basically, it refers to create the consistency in the interest of all participants in the supply chain. In many situations, it can be accomplished by integrating with the system. Supply chain strategies must be aligned & properly integrated with organizational philosophies. Collaborative approach can build with customer & supplier can build alignment & runs the system in proper way.

Strategic Sourcing

Strategic sourcing plays an important role in products & services, making them available to the end consumers. So sourcing of materials plays an important role in having advantage over others [10]. In aerospace industry where more than 80 percent cost of given product is directly tied up with materials. So it's very important to procure all the components at lower cost without sacrificing quality.

CONCLUSION

Supply chain management is a dynamic concept and it is changing in present context. Lots of disruptive technologies are being used to ensure smooth functioning of an efficient supply chain. 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. Agile supply chain framework can reduce time in all process areas & increase productivity. t is imperative to use analytics, data science and predictive models for smooth functioning of supply chain. Paradigm is being changed already.

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