

The Role Of Technology In Supply Chain Management

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Abstract: Emerging technology advancement in various fields due to internet services, young field supply chain management grab the most of the opportunity to establish its hand in Indian economy. Information movement is the key for supply chain management because most of the activity transfer to web based technology. Information movement between suppliers to company, company to customer is important for successes of supply chain management. Reaching global market is possible now because of technology. There are many actors across the world exploiting the opportunities of great demand. But successful actors are very few because of market profitability. Building it and make it conceivable by use of Internet technology as a promotion channel needs new understanding about how the complete logistics arrangement essentials to be established in different environments and about the consequences this will infer for other performers. This paper deals with integration dimensions of supply chain and technology role.

Keywords: Supply Chain, Information, Internet, Technology.

1. OVERVIEW

Due to continuous growth of logistics area, it strikes as major research area. Generally the hypothetical side is a pair of years forward, pointing out if the utensils were existing, what might be done. Technology progress fastens, the vision of supply chain management turns into realism. The development of e-commerce and m-commerce (mobile commerce) made supply chain management a vital area of business. Management of Inventories, coordination cost and transactions in micro level and macro level to be analyzed to give better prospective. Relationship and control structure such as cooperation, Competition and other impacts were discussed from socio-psychological and behavioral aspects. Suppliers, manufacturers, shippers, distributors, retailers and customers are major stakeholders in supply chain management. Due to increasing importance to technology advancement and change of customer requirement and expectation, the need of integrated logistics management getting more attention. Effective management of supply chain is a very essential feature in any business as it is directly related with the cost of the product mass-produced and also business plan and the prominence of logistics (Rajendra Prasad, R., & Srinivasan R2019). The technological advancements, global trade, consolidation activities and outsourcing of projects have only led to growth in the civil engineering logistics services market and this industry will continue to evolve in the coming years Rengamani, J..2018).

This paper delivers a perspective on supply chain snags, sketch few challenges via secondary data and articulate few sensational initiatives that needs to complete through intelligence in handling supply chain management.

E-Business and Supply Chain Integration:

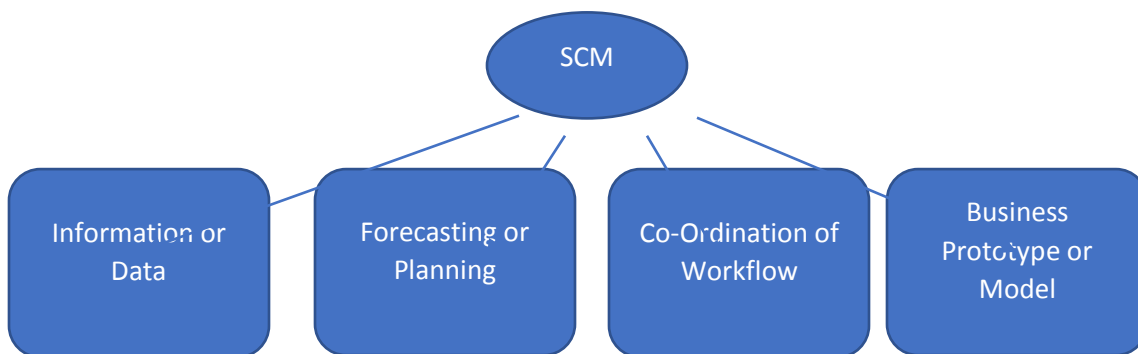
Electronic business is one of the global business in emerging in the world. Almost 30 percent of the consumer market currently under this sector. Shipper are always looking for a way to reduce the cost of supply chain management (SCM) in this economic world. Today every industry trying for cost cutting. Consumer wants more service and enhanced transparency in supply chain management. Since the beginning of the wireless age, numerous third-party logistics players (3PLs) and supply chain managers have become cloud computing and wireless technologies to automate systems and increase correctness. Almost 56% of supply chain suffered disorder for couple of years globally. In this 52% of trouble happens in the tire 1(i.e base level), in this 30% of the companies don't go for analysis about troubles.

The key dimensions for supply chain success are:

- Integration of Data
- Synchronization of Forecasting
- Synchronization of workflow, and
- Novel business prototypes

This quadrant represents the accelerating degree of co-ordination and integration among members of supply chain, finalizing the business conduct in new way.

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**Taken 1: Supply Chain Integration Dimensions**

| Component | Essentials | Values |
|--------------------------------|---|---|
| Integration of Data | <ul style="list-style-type: none"> . Data distribution & transparency. . Actual & direct ease of access | <ul style="list-style-type: none"> . Less bullwhip effect . Prompt problem finding . Quicker reaction . Confidence building |
| Synchronization of Forecasting | <ul style="list-style-type: none"> . Collective planning, estimate & replacement . Joint design | <ul style="list-style-type: none"> . Reduced bullwhip effect . Lower cost . Optimized capacity utilization . Improved services |
| Synchronization of workflow | <ul style="list-style-type: none"> . Synchronized production scheduling & tasks, procurement, demand meting out, technical modification & design | <ul style="list-style-type: none"> . Effectiveness & accurateness gains. . Quick response . Better service . Prior time to bazaar . Extended network |
| Novel business prototypes | <ul style="list-style-type: none"> . Computer-generated resources . Logistics rearrangement . Huge customization . Novel services . Click-and-motor prototypes | <ul style="list-style-type: none"> . Improved talent utilization . Greater efficiency . Infiltrate new marketplaces . Innovative novel goods |

The Technology Role - The Internet

To gain competitiveness many companies using supply chain amalgamation which is not new in business world. But it was done manually. Due to the technical advancement in 19th century dimensions of business has been changed drastically. Information and communication technology's components like Server-Client Architecture, Relational data base management, Transfer control protocol/Internet protocol, wireless technology, multimedia and mobile technology development in recent days have their way of spreading new innovation and new options. Online business or internet/intranet enables integration of supply chain more flexible.

Electronic Data Amalgamation:

Supply chain's integration's foundation is data or information Amalgamation. To improve supply chain performance accurate data ns timely information is key. Most of the companies diagonally connect their supply chain components electronically to manage their finance, products and information flow reflecting the status to their partners for accessing and sharing the information and data.

Electronic Synchronization of Forecasting:

In supply chain management planning is more important to execute effective and economic implementation of process flow. Forecasting is possible by extracting the information available like data analysis of relevant goods in the market,

raw material suppliers and their time delay in the Web. This type of activity also reduces the flow cost and wastages.

Electronic Workflow Synchronization:

Trough Internet organizations can go one step further in partnership, through synchronization, amalgamation and even computerization of critical commercial processes. Workflow synchronization can comprise activities like procurement, demand performance, industrial change, strategy optimization, and commercial exchanges. The outcomes are far more economical, quick, dependable and fewer blunder in supply chain processes, There are few samples of how different establishments are having innovative workflow activity synchronization in these and additional areas.

- Purchase: All manufacturing establishment needs to purchase thousands of raw materials from many supplies. The companies are managing the complexity of purchase process with the help of internet technology.
- Demand Processing and Commercial Streams: A Silicon Valley startup establishment, has developed a software based on web-services to expedite and process the demands, for manage discounts, concessions, and other commercial exchanges for operatives (like cafes), suppliers and manufactures in the edible item deal industry. Its task is to prepare easy-to-use facilities with

lower cost and offer appreciated information for all associates of the food service supply chain.

- Purchase Management for New Goods: Finding parts for novel goods can be a main obstacle to provide prompt and cost-effective novel goods introductions. The web technology provides the companies an opportunity to get multiple quote for all raw materials as per requirement, complex purchasing, decision-making, purchase order, order change, cancellation or confirmation in hours in place of days. Enterprise Resource Planning is best solution for new goods.

Novel Business Prototype: Once establishments start to understand the potential of E-Business empowered supply chain amalgamation, establishments often finds a new means of tracking business ideas, evolving policies and professional prototypes that not possible earlier to the web technology. The opportunities and business areas are limitless. Few possibilities are: Virtual Players: Multiple resources of SCM once acted independently now works simultaneously to meet the needs of SCM companies due to development of web technology. The resources like inventory, stocks, untapped demand, capacity and market can access through web. Reorganization of Supply Chain: Due to advancement of Information and Communication Technology, organizations reorganize their logistics flow of their goods to gain the advantages of technology. Information flow need not be followed by Physical flows in future: The web service lets information movement to alternate for some of the useless physical flows. 75% of the one the most popular hardware and software company Cisco's products engaged through web service. The sales conducted through web by outsourcing most of its manufacturing products installation creates new customers. Product Promotions: Web technology users uses internet to upgrade their software. Some companies who are using novel idea to upgrade their hardware products as well. Field-programmable logic devices produced by Xilinx. It is a semiconductor company. Xilinx products keep changing or upgrading periodically. It upgrades its firmware through internet. Huge Customization: : Web technology allows many companies to enables their customers configure particular demand to the tastes and favorites of the consumers. Hence, the web facilities is used for popular consumer customization. Facilities & care: Customer service and care is a time-consuming activity, costly affair for many organization. Remote sensing and finding with the help of web service proven most economic solution. Anti-virus Software organization providing service support to individuals and companies by accessing their machine though remote sensing to keep their computers running From Goods to customer care: Best-selling finance products like personal finance, tax preparation and small business develops and markets, as well as a set of Web-based financial tools by Intuit. The online giants like amazon, flipcart, bigbasket are doing business through online. Now a days even foreign investors are willing to invest in online suppliers like suggi foods etc. It save the time, But efficient supply chain management is key for success.

Benefits:

Buyers are getting more benefits through online supply chain management.

- The E-SCM enables buyers to buy direct and unintended materials at a less cost due to competition and cost transparency.
- It gives greater efficiency to the buyers while purchasing goods by ultimately lowering the cost of conducting commerce.
- A stronger relationship may be established by companies with suppliers, consumers, 3PL's etc to plan, design and develop better supply chain relationship.

Benefits for supplier naturally falls into two categories like sharing product data and design or scheduling and delivering consumer products. Electronic supply management concentrate on partnership between suppliers and consumers. The companies are playing the role between the product agent and consumer. The delivery players plays a vital role in SCM by delivering the product at right time align to their production schedule, manufacturing capacity and inventory management. Benefits of Facilitator: Electronics-SCM enables the facilitator to provide some product or service. A software/hardware vendor provides application functionality through web service reduces their man cost. The business to business (B2B) market facilitator is a market maker who establishes, administrate and operate the business only through web service using a bank gateway. His benefit strictly based on transaction. In general at least 3% marketplace charges for each completed transaction goes to the market makers Even though there are lot of revolutionary happens in online marketing with E-Supply Chain Management, there are lot of problems too to be addressed. The main Causes for disruption are

- IT outages
- Adverse weather
- Cyber-attacks and data breaches
- New laws or regulations
- Act of terrorism
- Loss of talent/skills
- Transport network disruption

Disruption Consequences are financial impact, Logistics impact, and Reputation impact. Compare to 2017 Health and safety incidents rank improved to 8th from 21st. Business continuity arrangements are made by 76% of the company to tackle supply chain disruptions. Compare to 2017 top management commitment increased from 8% to 33% to handle SCM disruption. 38% of companies using technology to monitor, predict, measure, record and report the performance of SCM. It gives clear picture about disruption. Almost technology choice of SCM professionals are 46% spreadsheets 13% Incident response data 6% Third party due diligence solution 4% Social media/news tracking devices 1% Geospatial models 2% Geopolitical models 1% Environmental models. Disruption data shows that 56% due to data breaches and cyberattacks, 54% due to unplanned IT or telecommunications outage, 44% due to new laws or regulations, 41% due to adverse weather, 39% due to Loss of talent/skills, 31% due to transport network disruption, 29% due to Outsourcer failure and 25% due to Human illness. This are few top reasons for SCM disruption.

CONCLUSION

Supply chain is a major developing field in India for one decade. The major threat is investment for security and technology. Because of overpopulation many marketers not giving thought for customer care. The companies are not much worried about online breaches and data theft. This can be overcome by implementation of fully secured technology for the e-business. Major attitude changes needed in communication sector to provide uninterrupted service. Recent day's only Indian law and regulations are giving serious thought for cybercrime and data theft. If these three major challenges solved means at least the online business will get attention and opportunity to development.

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