How technology changed the supply chain management term paper sample

Supply Chain Management

In every business, there are some suppliers as well as some customers. For our suppliers we are customers and for our customers we are suppliers. Moreover, our suppliers also have suppliers and our customers have customers too. Therefore, the concept of supply chain management is to manage the coordination in flow of materials or service from our supplier's supplier to our customer's customer. The aim of supply chain management is to generate information from company's supply chain activities to gain competitive advantage by reducing cost and through increasing sales because of the customer satisfaction (Boyson, Harrington, & Corsi, 2004). With efficient supply chain management, we know better about our customers and their needs thus we can provide them product or service matching their needs, which will increase their satisfaction.

Supply chain management in past

In 1950s, supply chain was only transportation. Managers responsible for transportation held a lot of power in the organization. Then managers were focused on reducing cost per unit and reducing this cost per unit was only measurement of success of the transportation manager. The frequency of goods travelled and time taken in the transportation were ignored. However, some innovators started thinking about the total cost of the goods landed and they found out that reducing cost per unit did not ensure the lowest total cost goods that are to be landed (Chopra & Meindl, 2001). Thus, they formulated a new idea that transportation cost could be a trade off with cost of goods and also total cost can be reduced when goods are travelled faster

and in more dependable way. Thus, the concept of reducing total cost of goods landed came into practice. Until 1970s, this concept of using total cost as the measurement of transportation cost was universally accepted due to its better logic. In 1980s, the concept of downstream and upstream distribution came into consideration. Downstream logistics refers to the flow of goods from the company to wholesalers to the ultimate consumers and upstream logistics refers to the flow of raw materials from the company's suppliers to the company. In the management of upstream and downstream logistics, many companies also acquired their suppliers and their distributors to make the management of supply chain easier. In addition, the importance of the differentiation of inbound and outbound logistics came was felt at that time. Inbound logistics is the movement of materials within the company from landing to store to the places for final consumption. Companies started focusing in management of inbound logistics to reduce cost. Outbound logistics is the flow of goods outside the company. This was already in concern of managers.

In 1990s vast reforms in the field of supply chain management were done. In this decade, firms started using processes in practice, which were only in theory earlier. A new concept called 'just in time' emerged. Also at the end of this decade, firms started using technology for the first time. Use of Enterprise Resource Planning (ERP) system was started in this decade. Modern era in the sector of supply chain management and in the total business started in this decade.

Communication with suppliers and customer

Before software used in supply chain management came into practice companies used to communicate with their suppliers, customers through direct personal communication, by sending orders written in the document through mailing (not e-mail), and through telephone (Shapiro, 2001). This system was totally manual and there were a number of disadvantages. Those disadvantages are as follows:

- Since the process was manual, the flow of material was time consuming. Order had to be placed much before the material was actually required in the company. In addition, there was no fix time this manual process would take. So sometimes materials used to land much before the anticipated time creating the excess of materials and lack of storing place and sometimes materials used to land much late than anticipated time thus creating shortage of materials in the company.

- These manual processes used to incur a lot of cost and apart from the cost of material landed often there used to be other costs such as cost of excess materials and shortage of materials in the company from the reasons explained in the point above.

- Moreover, the confirmation of the quality of materials that are to be brought was often a problematic task because there was much less communication between the buyers and sellers.

- Mistakes were very difficult to check because the whole manual work had to be checked to identify a single mistake. Data analysis and summarizing of data was very hard thing to do and it used to take a lot of time.

- There were difficulties in forecasting of demand and also the quantity of

materials to be bought and often the gap between forecasted demand and actual demand used to be more because of availability of limited information and also due to the lack of method by which so available information be refined for the decision making purpose.

- Communication between the networks of supply chain was low and if there were some problems then it was often difficult to find out that who actually did the mistake so that the problem is aroused. Since it was difficult to find out root cause of problem, solving the problem was even harder.

Supply Chain Management now with the use of technology

In today's business world, there is no option of not using technology in business process. You cannot even imagine your business without the use of technology and if you dare to do so then you are more than hundred times below your competitors (actually they will not even be your competitors). Thus, technology is widely used in supply chain management as in other business processes. Technologies that are being used in the supply chain management are as follows:

- Enterprise Resource planning (ERP) system

This is a software, which is used for management of business by collecting, storing and interpreting data from all of the business activities such as production, marketing, procurement, human resource, supply chain management, accounting and others. ERP provides a tool to better forecast and plan, which will ensure a better level of inventory, which is derived from the forecasted level of customer demand (Simchi-Levi, Kaminsky, & Simchi-Levi, 2000). By integrating all external and internal business processes ERP

helps to forecast the demand more precisely and also to find out changes in demand within the course of business thus enabling them to respond according to the demand. With the use of ERP, supply chain management is being cost effective because it gives timely information on when to order with the analysis of demand. ERP as the name suggests optimize the use of overall resource of the organization also by minimizing the cost associated with supply chain management. SAP, Infor, Microsoft, Oracle and Epicor are some top vendors of Enterprise Resource Planning (ERP) system in the world.

- Customer Relationship Management (CRM) System

Company can interact with present and perspective future customers by this system. By knowing customer's demands and requirements in the product, company can modify or improve their product, which will ensure more sales. CRM also consist of features that will enable a company to project sales, automate sales force, and to develop and maintain relationship with present and future customers. CRM helps in supply chain management because it segments the customers according to their needs and thus shipment of goods to those specific segments of customers can be done efficiently (Simchi-Levi, Kaminsky, & Simchi-Levi, 2000). CRM and SCM (Supply Chain Management) should be combined together to make it sure that right product is delivered to a right customer at right time. Oracle, SAP, Microsoft, Sales Force and Right Now are some top vendors of Customer Relationship Management (CRM) system.

- Cloud computing

Cloud computing is a computing where data are stored in computing

resources and are accessed through internet instead of carrying data in personal devices or in local servers. Through the use of internet the services such as servers, applications and storages are reached to the organization's computer. These clouds are of three types and they are public, private and hybrid clouds.

Cloud providers have already provided few warehouse and transportation applications. Logistics needs and order placement can be done online through the cloud-based collaboration between the companies. Through cloud computing a company can deal with thousands of suppliers also by comparing the rate and service quality of millions of suppliers throughout the world. Therefore, it is time for company to transit to cloud computing and reap the benefit, which is most in the business activity related to the supply chain management. VMware, Citrix, Joyent, OpenStack, IBM are some popular providers of cloud computing service through internet technology. Organizations can use all of these three technologies together rather than just using one. Forecasting based on data extracted through cloud computing can be done simultaneously with the forecasting done by the data generated by ERP in the internal system of the company. CRM should be combined with ERP and SCM system for the better use of all of these three systems.

Advantages of Information Technology in Supply chain Management

- Use of information technology reduces the problems of time uncertainty in the shipment of goods.

- This reduction in problems with uncertainty of time will almost eliminate

the extra cost that would incur in the storage of excess inventory and the cost associated with shortage of inventory. In addition, the total cost of the goods landed will be less because information technology helps in selecting the lowest cost vendor available.

- Quality of goods landed can be confirmed whereas the time travelled by goods can also be minimized through the use of technology.

- With better forecast from the use of ERP and cloud computing, it will be easier to find out the right lot size depending upon the demand of the product in the market.

- With technology there are less manual work and it will enable to correct errors in the process because data can be summarized more easily finding out the errors faster than with manual work.

- Use of technology accelerates the speed of the delivery of goods from manufacturers to the final consumers. This will reduce the time taken for business cycle of the organization and this can result in more sales.

- With the use of technology the collaboration between the networks within the supply chains is enhanced because of more communication among those networks and thus if any problems occur it will be easier to find out who did the mistake. When the root cause of the problem is known then the problem can be solved. Thus, one of the advantage of use of technology in supply chain is that it enhanced the problem solving skills.

- Moreover, use of information technology in supply chain management ensures better operational efficiency.

Examples of how technology benefits the supply chain

- Use of technology in SCM by Dell Computers

Michel Dell integrated supply chain management with internet technology and thus brought a new idea in the supply of goods form producers to end users. He ignored the use of distribution channel such as wholesalers and retailers while selling the computers made by Dell. This model is called direct sales model and it depends on the internet as customers can directly order their computers from the Dell Corporation via internet and even as per their own specifications. Not only Dell computers focused on customers but also on suppliers. Through the use of technology they were in such a good coordination with their suppliers that materials are supplied by those suppliers without any delay. Dell brought this new strategy and became the largest personal computer seller in the world. Nothing like this would be possible without the use of technology in the supply chain. So Dell Computers is best example to show that technology really benefit the supply chain.

- Wal-Mart

Wal-Mart is another example of the company, which mastered in the smooth functioning of supply chain management and excelled in the retail business through to use of technology. Wal-Mart started using technology from very early. It developed a new way of doing business, which is called Vendor Managed Inventory (VMI) in 1975, and then at present those vendors using technology directly know the status of the cells of each vendor. Vendor can know the amount of their product remaining in each store and thus deliver goods by themselves. For regular business, not even order is placed by Wal-

Mart. What Wal-Mart did was they used effective technology in the supply chain management. Without availability of required technology, this will not be possible so easily.

Summary

In today's world whether to use technology or not is not even a question. Use of technology is a basic requirement for business houses. Just using the technology might not even give them competitive advantage because it is available to every other competitor. Thus to succeed in a business you should know to use technology in an innovative way as did by Michel Dell and Wal-Mart in examples above.

Supply chain is crucial process in the business because it incurs a lot of cost. Thus, management of supply chain in an effective way can save or reduce a lot of cost, which will directly affect the profitability of the company. Use of technology is necessary in supply chain management. If you do not use technology in supply chain management of your organization, you will lack far behind. Therefore, there is no option of not using the technology. Previously when the processes of supply chain management used to be done manually it had several problems. Those problems are now mitigated by the use of technology. However, new problems are arising in today's world. Cost incurred to buy certain technology is in itself a problem because the technology is changing so fast and it will not even take few months to make expensive just installed system inferior than that of new system installed by competitors. In the field of supply chain management the systems such as ERP, CRM, and cloud computing have made the work a lot easier. However,

in some organizations professionals who can use these new software programs efficiently are lacking. Just installing the program will not do anything. First, you should make sure that it would be efficiently used. Previously supply chain management used to be top most concern of managers but nowadays they believe that supply chain management has been made easier by technology. Therefore, risk management is the top most concern of current managers. Lastly, one of the keys of success in today's business world is use technology for an innovative purpose. A very innovative purpose actually.

References

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