



Research Article

SUPPLY CHAIN MANAGEMENT (SCM) @ KEY ISSUES

Srikanta Charana Das and Sandeep Kumar Mallik

School of Management, KIIT University, Bhubaneswar, Odisha, India

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ABSTRACT

The present paper is an initiative to understand the basics of supply chain management, understand the supply chain models, to know the evolution of SCM, development of supply chain management and to know the key issues of SCM. Secondary data is considered for the preparation of the paper. The various challenges faced by SCM are in the context of distribution network, inventory management, production, supply of materials and supply chain integrations.

Key words:

Supply Chain Management,
organisation and models

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INTRODUCTION

The concept of supply chain is unique in nature and it is slowly becomes one of the important parameter to create a unique distribution model of supplying materials and finished goods. Over the year the process has seen significant changes. Information Technology revolution also helped to achieve a smooth flow of information in more sophisticated way. Because of steep competition and increasing complexity in consumer demand, delivering service and goods at proper time is the need of the hour. The way of managing any business activity has also seen lots of changes. New concept like, JIT, balance score card, blue ocean strategy etc. are some of the areas where existing organizations slowly adopted the changes. In this changing environment, role of supply chain becomes more relevant. Delivering product or services are one of the important ways of creating customer value. If the existing customers are satisfied it will ensure repeat purchase as well as generation of new customers through them. SCM develops a unique chain of activities which helps the organization in both global and local environment. It is important to manage both the markets. Tapping the local market is not that much effective from a business perspective. Expanding the market size is the need of the hour and without adequate SCM system it will not be possible to achieve the goal.

There may be various definitions of SCM. A SCM model is basically a combination of various individual companies producing a product or set of products by contributing in

various parts of entire production process. The group of organizations may be suppliers, may be manufacturers or may be distributors. Individually they do not have adequate value unless and until they are jointly working to produce a finished product meant for a consumer or a group of consumers. The Council of Supply Chain Management Professionals (CSCMP) defines SCM as it “encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly it also includes coordination and collaboration with channel partners, which can be suppliers, in intermediaries, third party service providers, and customers. In essence, SCM integrates supply and demand management within and across companies”¹ So, an effective SCM is able to reduce the inventory, generate real time information which can be shared among the channel partners to produce a better result. Both it is not an easy task to develop a supply chain mechanism. Cost is an important issue to implement the system. In some of the organizations it is not that much effective to implement the procedure. Industry wise demand and need of the model also varies. Mostly the organizations that are in direct manufacturing activity, the need becomes important. Since, they are mostly supply driven, it is important for them to maintain adequate supply of raw materials as and when the need arises. Previously the things were managed by creating an inventory level. But, inventory shortage or excess inventory often leads to loss for the company. Timely supply of raw materials becomes a crucial in these cases. While designing a supply chain system, it is important to develop the required infrastructure.

*Corresponding author: **Srikanta Charana Das**

School of Management, KIIT University, Bhubaneswar,
Odisha, India

¹ Council of Supply Chain Management Professionals (CSCMP), Supply Chain Management Definitions, 2012, Available: <http://cscmp.org/aboutcscmp/definitions>

Integration model will only work when each and every stakeholder have the ability to create a minimum infrastructure to support the system. In today's organization, flow of information at right time is a big issue. This should be ensured and for that required IT infrastructure may be developed. Giving this backdrop the entire supply chain model can be analysed so as to get a more prominent picture about the way of its functioning.

Objectives of the study

To understand the concept of SCM and its key issues
 To undertake the empirical study on ERP and SCM

METHODOLOGY

Secondary data is considered for the purpose of study.

Defining Supply Chain

It is very difficult to define supply chain in one single sentence as it is basically a combination of various activities. The basic essence of supply chain lies on the integration system. Supply chain can be defined as a combination of various groups of organizations who are interconnected with each others to process the raw materials to produce a single output in the form of final product or service for the consumers. The term 'chain' has its own meaning in the entire system. A chain can be created if and only if there is more than one participant in the value chain. One company managing both back end as well as front end activities can't form a supply chain model. In various literatures, researchers focused on these issues to get a definition of supply chain. Moreover, the participating companies in the supply chain have their own identify which makes them a single individual entity. In no way they are linked with each other. Even if this is the case, a legal binding should be there while defining the supply chain since, it has the dependency on each other. This dependency develops the legal relation which can materialize for business activities. This also helps to develop a sense of belongingness among the various companies participating in the business model. If the link is for the downstream activities then surely it indicates the suppliers whereas if the link deals with the upstream activities, then it is the customers who add value in the chain. Ultimately the main objective of the chain is to create value for each and every single stakeholder. The basic supply chain model can be described in the figure below:

are demanding the products produced by the manufacturers. This linkage is very vital to develop an effective supply chain model.

A supply chain model has various branches which depend on each other. It has a supplier side, manufacturing side and delivery side and all these three branches should have a coordination to build an effective model. Normally, manufacturers are purchased raw materials from the suppliers and these raw materials are transformed into finished products in one or more factories own by the manufacturers. The finished products are then transferred to various warehouses for intermediate storage before delivering to retailers and distributors. The retailers and distributors are the end point 'point of contact' who is selling the finished products to end consumers. The entire process if develop properly has the ability to minimize the cost of entire operations and simultaneously able to manage the inventory properly. Too much of inventory storage is not good for the company as it is increasing the cost of operations similarly, too less inventory storage is going to affect the production. A right balanced should be maintained to meet the market demand and effective utilization of resources to produce the final products. The supply chain model has another dimension as well and that is related to logistic network. It is important to develop a logistic network along with the supply chain model so as to run the entire system in a more effective way. The entire system can be represented in the figure below:

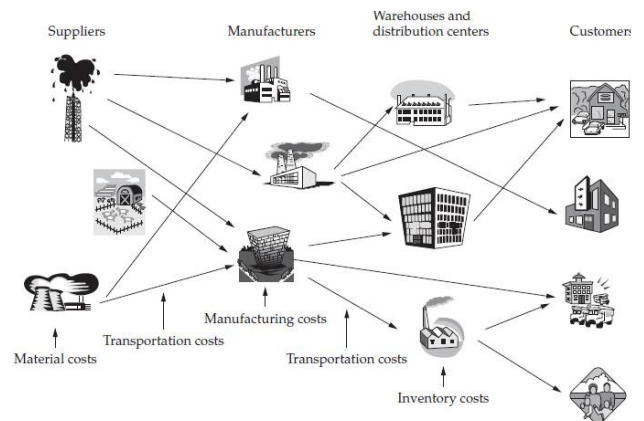


Figure 2 The Supply Chain Model

Source: *Designing and Managing Supply Chain, Chapter 1 – Introduction to Supply Chain Management*, by David, Simchi & Levi, McGraw Hill Publication, pp 2

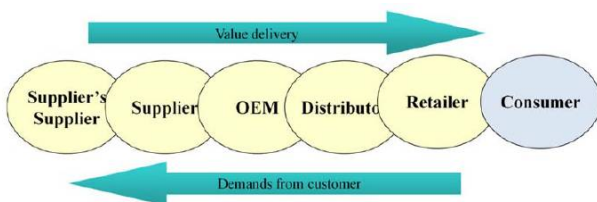


Figure 1 Basic Supply Chain Model

Source: Dawei Lu (2011); *fundamentals of Supply Chain Management*, Dawei Lu & Ventus Publishing Aps, ISBN 978 – 87 – 7681 – 798 -5, pp 10

The model shows that in between suppliers and consumers, there is always one Original Equipment Manufacturers (OEM) which plays an important role. The products produced by OEM needs separate treatment from the suppliers as well as consumers. Only those suppliers are accepted in the model that is able to supply the materials desired by the OEM. Similarly, the OEM has a specific group of consumers who

It is visible in the graph above that a typical supply chain model is a combination of various activities and each of the segments has to perform its own duties and responsibilities so as to get the desired result. The cost is an important issue and as a result of that it is important to determine the costs associated with each and every activity. The important cost factors are material cost, transportation cost, manufacturing costs, transportation cost of sending the products to warehouses, inventory cost. All these costs factors are typically associated with the supply chain model and if it is possible to reduce the costs associated with these various segments only then the supply chain model become more effective.

Evaluation of Supply Chain

Before the concept of Supply chain arrived in the year 1980s, the term 'logistic' was more relevant among the users. It was

mainly used in military operations where it was viewed as procurement, maintenance and transportation of military equipment and services (Ballou 1978). It was never viewed as an integral part of manufacturing company. During the 1970s most of the company were cost driven companies and performance of the managers were judged based on the fact that how much cost they were able to reduce. Since, that was the practice; focus was never given on the role of suppliers to develop an integrated model. Suppliers were suppose to supply the materials at a lower cost and for that matter some amount of sacrifice in quality were allowed. Too much focus on cost factor ultimately led to inefficient production of finished products. As the competition was low and very few sellers were selling products of a particular category, it was not a problem during the initial years. Very soon, looking at the lucrative market conditions, other players were also started pouring in. The market potential was enough to increase the competition. As number of players were started increasing, competition becomes inevitable. Cost factor no more stayed as the only criteria to judge the efficiency of the managers. The market competition led to product improvement and pressure was there on the suppliers as well to supply quality raw materials which can be transformed into quality finished products. This was the first time need arise to think about alternative way of improving the efficiency of the organizations as well as products that they were producing. The changing business environment forced the top management as well as the management consultants to think about alternative solutions where the system can be integrated. This integrated model ultimately came in the form of Supply Chain Management. Since then SCM becomes the one of the most researched area in the area of academics. Various angles were opened up and the model started playing an important role to various industries. Today it can be seen that individual businesses are no longer operating individually. It is basically a chain of events which produces total output. For this reason organizations should integrate all the facilities and suppliers to create a network of value delivery system which helps to generate maximum value for the organization.

would not give any effective result. The organizations identified the role of other stakeholders who were playing active role in the system. So, the concept of SCM was taking its shape during that time. At the same time this model was more effective for manufacturing industry only as they have the robust system of production. Application of SCM in service industry was ignored till 1990s. In the year 1995 the service industry also realized the potential of dedicated SCM so as to deliver value to the customers. Since the service products are intangible in nature, it is the service delivery which became more tangible element for the customers. Most of the customers were started judging the quality of service with the help of service delivery process. If the service providers were able to deliver the service well within the due date then it helped to increase the customer loyalty. This SCM model subsequently linked with the Customer Relationship Model so as to understand the service expectations of the customers.

Key Issues in Supply Chain Management

It is accepted by the each and every industry that SCM is an effective model which has the capacity to add significant value towards overall profitability of the individual organization. The model itself has seen various changes since its introduction in the year 1980s. Initially it was manufacturing industry and subsequently service industry also able to understand the need of a model like this. Today, the growing demand of e - commerce business also pushes up the need for a well managed supply chain model. It is because of this need continuous improvement is necessary. It is important to understand that every business is dynamic in nature and entirely depends on the choice of the individual customers only. If the need and specific expectation of the customers are going to change then marketers must acknowledge the changes and specific modification is required. It is no more simple availability and supply of materials to factory and from there to warehouse and ultimately to customers. It becomes a value chain where utilization of resources is getting more priority than anything else. The supply chain model being part of the organization value delivery system also feels the pressure of this continuous changing business environment. Another angle which becomes vital is the use of information technology. Today, no service can be delivered without the use of technology. So, it is important to integrate the information technology in the value delivery system. It will not only make the system more transparent it will also help to give more confidence to each and every single stakeholder. Moreover, the system will become more effective as it will become easier to monitor the movement of the material on a real time basis. Though, the existing SCM is effective to deliver the value as per expectations, still some key issues should be addressed so as to design a better system in the years to come. In this section, some of the key issues which are relevant are identified through review of literature and these are discussed so as to understand issues.

Issue Related to Distribution Network

Creation of distribution network is one of the important roles that the manufacturers have to think about. A typical producer has to purchase the product from the suppliers. The suppliers send the products to factory. From the factory it moves towards warehouses located in various parts of the market and

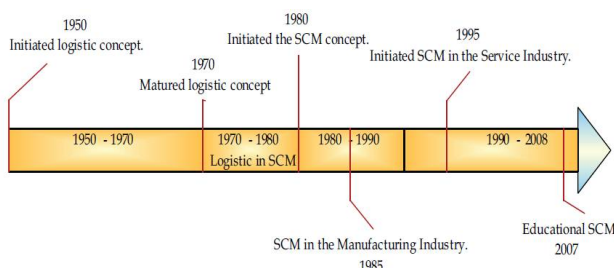


Figure 3 Development of a Supply Chain Management System

Source: Evolutionary timeline of SCM (Habib and Jungthirapanich, 2008)

The evaluation of supply chain management model can be seen in the figure above. The initial concept was focusing on the logistic part only. During that time main aim was to focus on cost minimization that comes as a result of transportation of materials from one place to other. A more matured logistic concept was developed during the year 1970s and till 1980s the focus was on the logistic part of the organization only to create a more efficient and productive environment. It was in the year 1980s; the focus was shifted from logistic towards a more integrated model. That was the time most of the organizations realized that too much focus on logistic part

ultimately from the warehouse to retailers and distributors. This is a typical SCM that works. It can be seen that in this entire distribution model, distribution plays an important role and it involves lot of transportation cost. The major problem that the manufacturers are facing is related to location of market. If the market is located at a specific geographical area then cost of transportation will become significantly low. But it is generally diversified in nature and there lies the real problem. It becomes difficult for the manufacturers to identify the location of the factory, location of the suppliers and the location of warehouses from where it becomes easier to supply the finished products to retailers and ultimately to customers. Multiple locations of warehouses need to be justified in terms of cost associated with it. Identification of suppliers is also fall in the same line. If the locations of suppliers are far from the factory where the product will be produced then it will not be a cost effective model. Since, the location of the market cannot be changed; setting up other things should be planned adequately so that customers should get the product as and when they are demanding the same. This entire distribution framework is not easy to develop and requires application of technology to resolve it.

Issue Related to Inventory Management

Inventory is a major issue for retailers as well as the manufacturers. Inventory stock has a direct link with the consumer demand. In a dynamic market environment the demand for goods or services varies. It is difficult to accurately judge the demand. But both the retailers as well as the manufacturers have the historical demand data which can be use to predict the future demand. The forecasting models become more effective in this regard. But some amount of uncertainty still remains and as a result of this, inventory management becomes difficult. The changing nature of the demand often makes it impossible to determine the reorder point. It is a proven fact that too much of inventory or too less of inventory is not good for any party. In both the cases it will accelerate the cost of production. Considering this fact, it is important to incorporate the inventory management module in the supply chain framework. Inventory stock may also vary industry wise. If the manufacturers or the retailers are belong to first moving consumer market, and then stock of inventory should be high as products moves fast in the market because of frequent purchase by the consumers. On the other hand the movement of the goods are not that much high in case of consumer durable market. So, a uniform system may not be possible to derive. Industry wise a separate mechanism may be developed.

Issues Related to Production

Production cost has two major components, viz. transportation cost and manufacturing cost. If the manufacturers want to reduce transportation cost then it may increase the cost of production as this leads to small batch of materials that is to be produced. A centralized production facility may have to develop to reduce the transportation cost. In this centralized location all the suppliers will establish their production units so as to reduce the transportation cost. The market should also be close to warehouses or near to factory so that it becomes easier to reach to retailers and distributors and hence subsequently to consumers. On the other hand if the manufacturers want to produce more, then it has to increase the size of the production facility and in that case a

centralized production system may not be develop. Moreover, a larger production batch means, manufacturers need larger market base. In this case, a market may not be close to producer's place. The end result is that cost of transportation will increase subsequently. It is important create a balance between these two factors which have a direct impact on the cost. The supply chain model should consider this issue and there is a need to develop the facility in such a manner that a balance can be maintained between the two factors. This will help to move the system in an efficient manner.

Issues Related to Supply of Materials

Supply side of supply chain management is a crucial issue. Supply contract often determines the relation between various stakeholders in the entire model. If every channel member thinks about personal gain or profit only then it will not going to create an effective model. Revenue sharing and cost sharing is a major issue which should be addressed adequately. This sharing has a direct impact on the pricing of the raw materials supplied by the suppliers. If order size is large then price discount is possible from the supplier's point of view. But order depends on the market demand. If adequate demand is there then a higher order can be placed. But when the demand is there supplier should not fail to deliver the product. Any delay at this stage will lead to customer dissatisfaction. So, planning is needed to understand the market demand, inventory requirement and supply order so that production should not hamper at any cost. Lastly, it is important to think about all the partners in the supply chain. Individual profit orientation may not lead to give good result. The supply chain model is an integrated model where individual thought process will affect other members as well.

Issues Related to Supply Chain Integration

Supply chain integration is another major issue which needs substantial attention from the implementers. As discussed earlier it is difficult to generate an integrated model where different stakeholders may have conflicting interest. Though it is difficult still it is not possible. Globally, there are several companies are there who are able to develop an integrated supply chain model and doing great business. It is important to understand the basic essence of the model. As the market is competitive in nature, survival may be possible if the market players are able to integrate the value delivery chain. Unless and until sharing of informations are not happening it is not possible to develop a strong competition in the market. The competitors may take the advantage of this situation and grab the market share. So, to remain competitive in the market the stakeholders should think system as a team effort where all the stakeholders, small or big, have the equal opportunity to perform. One way to develop effective model is to go for strategic partnership. This may be a welcome measure where partnership compels the other players to feel like a part of the system and not as an outsider of the company who just supplies raw materials or selling the finished products as retailers or distributors. Instead of being an outsider if they become an integral part of the organization, then it will going to give more value added services. It will also help to retain the market share as no other players are able to create any kind of threat. While designing strategic partnership, both front as well as back end strategic partnership may be developed. In case of front end partnership the distributors or retailers should be considered while back end partnership

mainly deals with the various supply partners. Both the two groups along with the manufacturers jointly create the value delivery model.

CONCLUSION

Supply chain management plays an important role for the growth and development of an organisation. The various phases of development of SCM includes Initial logistic concepts (1950-70), Mutual logistic concepts (1970-80), Initiated the SCM concept (1980), SCM in manufacturing industry (1985), Initiated SCM in service industry (1995) and Educational SCM in 2007. The various key issues faced at present in the context of distribution network, inventory management, production, supply of materials and supply chain integrations.

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