

Investigating the Role of Supply Chain Management in Electronic Commerce

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Abstract

Today, supply chain management, as one of the fundamental principles of infrastructure implementation of businesses considering in world. This paper is an overview of supply chain management issues and after expressing its concepts, its relationship with e-commerce in generalist role in information technology has been studied. This paper tries to clarify the basic concepts of supply chain management and explain its role in the development of information technology especially in electronic commerce.

Keywords: Supply Chain, global competition, Electronic Commerce, management.

1. Introduction

In the global competition of today, we have to make available various products for customer, according to their request. Customer demand for high quality and quick service, cause increasing pressure that hasn't been exist. As a result, companies can no longer afford to do all work alone. In the competitive market, in the competitive market, economic enterprises and productive addition to addressing the organization and internal resources and the found them self-dependent to manage and monitor the resources and related components of outside the organization. Reason for these in fact is to achieve competitive advantage with the aim of gaining a larger share in market. Accordingly, the activity such as supply and demand planning, material procurement, production planning, product, service, product maintenance, inventory control, distribution, delivery and customer service that before has done in levels of the company, now has moved to levels of the supply chain. A key issue in supply chain is management and control and coordinate all activities. Supply chain management (SCM), is a phenomenon that does it in a way that customers could receive reliable and fast service with high quality products with minimum cost. In general, the supply chain consists of two or more organizations that are legally separate and by flow of material; information and financial flows are related to each other. These organizations can be firms that generate materials, parts, finished products, or services such as distribution, storage, wholesale and retail. Even the final consumer can also be considered as one of these organizations.

2. Supply Chain Management History

In two decades of 60 and 70 organizations have tried to increase their competitiveness potential. To standardize and improve their internal processes produce a product with better quality and lower cost. At that time thought was that a stronger design and engineering and coordinated manufacturing operations, is prerequisites to achieve the demands of the market, therefore gain more market share. That's why organizations would focus all their efforts on increasing efficiency. In '80s, with increasing diversity in the expected patterns of customers, organizations are increasingly were interested in increase adopting flexibility in production lines and develop new products to satisfy the needs of customer. In the 90's along with improvements in manufacturing processes and applying there engineering patterns, Managers in many industries found that to continue presence in market, is not enough improve internal processes and flexibility in the capabilities of company. But suppliers of parts and materials should also produce with the best quality and the lowest cost and distributors of products should also have a close relation with manufacturer market development policies. With such attitude supply chain approaches and its management appear. On the other hand, with the rapid development of information technology in recent years and its broad application in supply chain management, many chain management activities, with new method are being carried out.

3. Definition of Supply Chain Management

Concise and comprehensive definitions of supply chain and supply chain management can be provided as:

Supply chain: supply chain; involve Supply chain, all activities associated with the flow and transformation of goods from raw materials stage (extraction) to Delivery to the final consumer and information flows associated with them. In general, the supply chain is a chain that includes all activities associated with the flow of goods and transforming materials, from raw material supply stage till the final delivery to the consumer. About the flow of goods there are two other streams, information flow and the flow of money and credit (Read & Walsh, 2012).

4. Supply chain management

Supply chain management including the integration of supply chain activities and their associated information flows through improving supply chain relationships, to achieve competitive and reliable advantage. Therefore, supply chain management is a process of integration of supply chain activities and related information flows, through improving and coordinating the activities of production and product.

Therefore, to investigate a unique organization in the context of these definitions, both network of suppliers and distribution channels should be considered. Definition given for supply chain includes management issues of information systems, sourcing and procurement, production scheduling, order processing, inventory management, warehousing and customer service. It is essential for effective management that supply chain suppliers and customers work together and in a coordinated method with the communication and information sharing and conversation. This means that the rapid flow of information among the customers and suppliers, enable distribution centers and transportation systems to create a highly efficient supply chain. Suppliers and customers should have the same goals. Suppliers and customers must be mutual trust. Customers have trusted for quality products and service to their suppliers. In addition, suppliers and customers in designing supply chain to achieve common goals and facilitate communication

and information flow must share together. Some companies try to manage their supply chains with general controls vertically – by using the property and the integrity, obtain all components, along the supply chain from materials to final product delivery and customer service. Organizational structure of company should focus on coordination of different activities to achieve the company's goals.

5. Five performance for managing the supply chain challenges:

Many of the technologies and tools used to improve supply chain solutions. Range of implementation technologies makes new ways to change the organizational structure, from hardware technology to software technology and information for organization. To achieve efficiency and effectiveness in the supply chain management we separate five performance for management that these five duty, are the factor of organizing. Skill and Supply chain management effectiveness would depend on competence and integrity of the five performances. Figure 1 shows the five performances.

6. Performance 1: Structure of supply chain partners

Designing Supply Chain Performance has been established Based on strategic factors and with considering customer requirements to design the supply chain. So that the cover range of available products, services, new products or customers. It is established Based on the knowledge of the final product in the supply chain. This means that in the long term, products quality for the competition, should develop and improve. Also, supply chain integration, will determine the level of competitiveness.

7. Performance 2: Implementation of Participation Community

This section refers to the essential contributions of organization. This performance expands supply chain relationships with outside factor. Any changes in supply chain should be informed to Partners and implemented in entire chain. In this section Backup supply chain processes will describe

- Organizational changes and changes in the supply chain operations
- Cooperative process to redesign the supply chain
- Implementation and evaluation of their role
- Position of supply chain management performance within the company
- Function 3: Designing the supply chain for strategic profitability:

Supply chain management requires effective participation factors outside the company. But the company's relationship with foreign companies is very problematic.

About partners Accuracy to the following is essential.

- Center of competition: what's the purpose of supply chain management and Choose partner on competition goal?
- aim of partners
- Partners Structure

8. Function 4: Supply Chain management information

The role of information systems in supply chain reform should not be ignored. This section shows the role of technology in improving supply chain. System changes should effect processes changes (modify) and company strategies.

- Elements of the supply chain system
- Technological innovation
- Using related software
- Problems in the implementation process

9. Function 5: reduce supply chain costs:

The main parameters of the supply chain improvement, is cost reduction. These efforts will be done to strategies and policies.

Five main reasons are cost of creation are:

- Definition of Supply Chain Process
- Changes of domestic and foreign policy of company
- Weaknesses in product design
- Incomplete information to decide
- Weakness of related circle of chain between supply chain partners

10. Outline of a supply chain:

Generally supply chain is a chain that includes all activities associated with the flow of goods and materials, from raw material procurement stage till the final delivery to the consumer. It's also present in relation to the other two streams flow of goods, information flow and financial resources flow and funds. Different Researchers and authors have provided different views and different definitions of supply chain. Some of them have restricted supply chain the relationship between buyer and seller, such an attitude, only focused on purchasing operations first category in an organization. Another group has a broader perspective on the supply chain and it contains all sources of supply (supply bases) for the organization. By this definition, supply chain, including all suppliers' first ranks, second, third, such an approach to the supply chain will provide only network analysis. The third view is the value chain <Porter> where in it the supply chain includes all activities required to deliver a product or service to the final customer. With this view to supply chain manufacturing and distribution functions will be added as part of the flow of goods. In this perspective, the supply chain consists of three areas of procurement, production and distribution.

Supply chain management has three main processes which are:

- 1) Information Management
- 2) Logistics Management
- 3) RELATIONSHIP MANAGEMENT

▪ **Information Management** Today, the role, importance and place of information is clear for everyone. Properly transfer and appropriate flow of information makes the process more efficient, more effective and easier to manage and more useful. In the discussion of the supply chain - as noted above - the importance of coordinating the activities is very important. This point is true about supply chain management. Discussion, management information systems and the information. Coordinate information management among the partners cause that increasing impact on the speed, accuracy, quality and other aspects will exist. Management information will cause more coordination in the chain. Generally in supply chain, information management will influence in different sectors some of which include:

Logistics Management: (Transport, handling, processing and accessing data integration processes and transport logistics, ordering and make changes to orders, production scheduling, program logistics and warehousing

operations) and data exchange between partners (such as the exchange and processing of information technical orders, etc.) Collection and processing of data for analysis and evaluation process of sourcing, selection and development of suppliers, supply, demand, collect and process information ... To predict future market trends and conditions of supply and demand; establish and improve relations between the partners. As evident, management information systems and information system collection of supply chain, can be effect on many different domestic parts of the supply chain. This issue shows the importance of this component in supply chain management.

Logistics Management: In analysis of production systems (such as automotive), include physical part of Logistic issue in Supply Chain. this part that include all physical activities from raw material to finished products, activities, transportation, warehousing, production scheduling, will accounted great part of the supply chain activities. In fact, the limitation of logistic, it's not only the flow of materials and goods, it is center of supply chain activities, that relationships and

Information is a supporting tool for improvement activities.

Relationship management: Factor that will guide us toward the end of the discussion and perhaps the most important part of supply chain management is due to construction and form, is manage relationships in the supply chain. Relationship management, has a huge impact on all aspects supply chain and its performance. In many cases, information systems and needed technology for supply chain management activities readily available and can be completed in a relatively short period of time and put to work. But many early failures in the supply chain caused by poor transmission of expectations and the behaviors that occur between parties involved in the chain. Moreover, the most important factor for successful supply chain management is so that the partners trust each other capabilities and operation. In short, the development of the integrated supplies chain, developing trust and confidence among partners and plan for the reliability of the critical elements to achieve success (Saeedi kia, 2009).

11. The main phases of supply chain management

▪ Phase I: Conceptual Design

The first phase is the construction strategy. In this phase, way of managing an organization, with creating an image for future and create a structure for the implementation will be determine. For the first phase of the process, a particular model of an organization is necessary and it's different from an organization to another one. The main Discussion in this phase is the conceptual design that is an evidence for confirmed implementation of two other phases. The purpose of this phase is to understand the details of the costs and recognizing benefits of implementing SCM

▪ Phase II: Design Detail and Test

As can be seen in the figure below, this phase can be run concurrently with the first and third phases. It means details design and the solutions are tested in the real world simultaneously. In this phase, changes in organizational structure and consider them for the implementation in system o support supply chain design is recommended.

▪ Phase III: Implementation

This phase, to continue second phase scheduled to implement long-term operation and changes in the system in order to making facilities is performed.

• Information Technology and Supply Chain Management

Supply chain management is based on a customer-centric approach. On this basis, timely and complete communication between all elements of the supply chain for the needs of the customer and rate of supplying demands is one of the needs of chain. To facilitate the flow of accurate information and appropriate management of software and integrated information systems and networks, intranets and extranets are required. With using e-commerce supply in supply chain can also use based on the model) 7 B2B and 8 (B2E Bto describe the process of buying, selling and exchanging goods, services and information via computer networks and especially Internet. Based on another model of Electronic Commerce (E-COMMERCE) Cooperative companies in a particular field through electronic networks can also cooperate. Such cooperation often occurs between companies in a supply chain. (Tahmoore, 2010)

- **Reviews the position of supply chain management, the implementation of e-commerce**

In general, supply chain management is one of the infrastructure implementations of e-commerce.

From the industrial perspective, electronic commerce between firms mainly occurs in industries where the supply chain is formed. Manufacturer has always been a factor that is in the middle of the economic activity. Because seller supply to manufacturer and customers of goods also may have customer for their self, we are facing a series of businesses which are both buyer and seller. It is like a chain, because all are interdependent. With proper management of supply chain, all the elements in chain use the benefit of it and it's also with offering high quality product to provide society's need. Therefore one of the important issues in industry, advanced countries' is (SCM), Supply Chain Management». One of the most important elements of supply chain management is automation of dealing between the members of the chain. It is so important that even before the advent of the Internet, automotive and aerospace industries, which are the largest and most complex supply chains, networks were established with exorbitant spending. Now, EDI standard that today's with the help of the International Standards Organization in Internet environment and context of XML is using for business, it has come from this private network. For supply chain management, supply chain sustainability is a critical factor and often complex shapes, economically efficient and sustainable supply chain management only seen in large enterprises. Right now in our country there are serious deficiencies in this field. On the one hand, the number of large enterprises in the country is very low. These low numbers are mostly non-private nature and therefore face with political issues. On the other hand stable supply chains in many countries are very low. Two notable examples are the automobile industry and the oil industry. (Abkenari Falah, 2012)

- **Barriers to SCM implementation**

Recent developments in the region forced them to use of supply chain management in industries. It is expected in the coming years there is a good product that provides opportunities for the export product. These countries consider as a potential market for the product. Structurally most important problem that supply chain faced with it, are the problem of multiple decision-making centers for the production, transformation and flow of goods. This would exacerbate swings in demand across chain length. This phenomenon is known as Bullwhip. This increases the accumulated balance between chain members, which eventually rising final cost and price of goods and reduced competitive strength of chain. IT by simplifying and accelerating the exchange of information, able organization and suppliers to understand each other's needs and timely supply, and these will strengthen the product philosophies. In the coming years, with the growth of the software industry is expected that it influence in product to the electronic assembly industry. It is predicted by promote the use of information technology in industry and preparation of infrastructure and the context of implementation of supply chain management systems, the size of demand will increasingly increase. (Massoumi, 2009)

- **Evaluation production technology and provide the needed technical expertise**

Supply chain management is based on a customer-centric approach. Therefore, timely and complete communication between all elements of the supply chain to know the client's needs and amount of providing demand is essential. To facilitate the flow of information and its strict management an appropriate field of software and integrated information systems and networks, intranets and extranets are needed. Production inside or offering product through partnerships with product manufacturers in the world is possible. In the case of domestic production, because development of the software industry in organization, and product with joint investment with foreign companies, could use of an expert in marketing and product support services, installation and service after the sale. (Herbst & Garcia & Wells, 2007)

12. Conclusions

Today, companies have found that they shopping part can be the increasingly effective in increasing the efficiency and effectiveness. And for this reason, change tactics and tried to buy their products, find a good way to shopping. So that shopping parts as part of the company can meet its strategic objectives.

To accomplish this, each strategic purchase requires strategic shopping planning for intended products; it means to establish a strategic relationship by suppliers. It is obvious that to realize this would need to establish strategic relationships by selected and competent suppliers, to near the strategic partnership with them, could achieve the desired competitive advantage. To achieve the goal of IT development and implementation of e-business and supply chain management solutions in organizations is considered as an essential issue. It is recommended that such industries as automotive, aerospace and petrochemical industries that are large suppliers of these solutions are used to improve communication with suppliers.

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