



THE APPLICATION OF SUPPLY CHAIN MANAGEMENT IN E-COMMERCE ENVIRONMENT

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Abstract

The application of e-commerce in supply chain management (SCM) has gained significant interest in researchers and academics in recent years since e-commerce and SCM are critical success factors. A case study on Dell Inc. was chosen because Dell Inc. has survived the recent economic slowdown since March 2016. This phenomenon was the result of Dell's success story demonstrated a real case of effective integration and implementation of SCM and e-commerce. Data was obtained via Web browsing and e-mail. This paper first discussed various activities that involved in supply chain management process; information, products, and financial flows. It then illustrated the ways that e-commerce to be integrated into supply chain management to gain competitive advantages in dynamic business environment. Findings showed e-commerce has the capacity to have an application on the physical, information and financial flows of supply chains. This paper is origin and empirical study that would be a contribution to business practitioners and academia.

Keywords : E-Commerce, Application , Supply Chain Management.

Introduction

With the wide spread of computer network, communication technology and the internet, e-commerce, as an advanced transaction method, which is based on the computer network, is fashionable all over the world. Supply chain management under e-commerce environment is a combination of e-commerce and supply chain management. It focus on customers, integrates whole the process of supply chain, makes full use of external resources, realizes rapid and sharp reaction, immensely reduce the level of stock. The development of e-commerce provides good situation for the implement of supply chain management, and at the same time, it also raises higher requirement, electronic supply chain management will truly become the main format of enterprise supply chain management, and will be known and applied by more and more enterprises. Supply chain management becomes an important way for enterprise to improve adaptability and competitiveness, and also is the important direction and filed in international business management.



Supply Chain Management

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. Supply chains exist in both service and manufacturing organizations, although the complexity of the chain may vary greatly from industry to industry and firm to firm. Below is an example of a very simple supply chain for a single product, where raw material is procured from vendors, transformed into finished goods in a single step, and then transported to distribution centers, and ultimately, customers. Realistic supply chains have multiple end products with shared components, facilities and capacities. The flow of materials is not always along an arborescent network, various modes of transportation may be considered, and the bill of materials for the end items may be both deep and large.

Traditionally, marketing, distribution, planning, manufacturing, and the purchasing organizations along the supply chain operated independently. These organizations have their own objectives and these are often conflicting. An objective of marketing is high customer service and maximum sales dollars conflict with manufacturing and distribution goals. Many manufacturing operations are designed to maximize throughput and lower costs with little consideration for the application on inventory levels and distribution capabilities. Purchasing contracts are often negotiated with very little information beyond historical buying patterns. The result of these factors is that there is not a single, integrated plan for the organization--- there were as many plans as businesses. Clearly, there is a need for a mechanism through which these different functions can be integrated together. Supply chain management is a strategy through which such integration can be achieved.

Supply chain management is typically viewed to lie between fully vertically integrated firms, where the entire material flow is owned by a single firm, and those where each channel member operates independently. Therefore coordination between the various players in the chain is key in its effective management. Cooper and Ellram [1993] compare supply chain management to a well-balanced and well-practiced relay team. Such a team is more competitive when each player knows how to be positioned for the hand-off. The relationships are the strongest between players who directly pass the baton, but the entire team needs to make a coordinated effort to win the race.

Importance of SCM



Supply Chain Strategies are the critical backbone to Business Organizations today. Effective Market coverage, Availability of Products at locations that hold the key to revenue recognition depends upon the effectiveness of Supply Chain Strategy rolled out. Very simply stated, when a product is introduced in the market and advertised, the entire market in the country and all the sales counters need to have the product where the customer can buy and take delivery. Any glitch in the product not being available at the right time can result in the drop in customer interest and demand which can be disastrous. Transportation network design and management assume importance to support sales and marketing strategy. Inventory control and inventory visibility are two very critical elements in any operations for these are the cost drivers and directly application the bottom lines on the balance sheet. Inventory means value and is an asset to the company. Every business has a standard for inventory turnaround that is optimum for the business. Inventory turnaround refers to the number of times the inventory is sold and replaced over a period of twelve months. The health of the inventory turn relates to the health of business. In a global scenario, the finished goods inventory is held at many locations and distribution centers, managed by third parties. A lot of inventory would also be in the pipeline in transportation, besides the inventory with distributors and retail stocking points. Since any loss of inventory anywhere in the supply chain would result in loss of value, effective control of inventory and visibility of inventory gains importance as a key factor of Supply Chain Management function.

Advantage of SCM

Supply Chain Management (SCM) software can offer tremendous value to any company that relies on the smooth planning and execution of related operations to achieve long-term profitability and maintain a solid competitive edge. That's why more and more organizations are purchasing and implementing supply chain applications. Here are some of the key benefits that SCM software delivers:

Improved Supply Chain Network

Supply chain management software provides complete, 360-degree visibility across the entire supply chain network. It allows users to monitor the status of all activities across all suppliers, production plants, storage facilities, and distribution centers. This enables more effective tracking and management of all related processes, from the ordering and acquisition of raw materials, to manufacturing and shipping of finished goods to customers or retail outlets. The status of mission-critical activities can be tracked at all times, and potential inefficiencies or problems can be identified and corrected immediately, before they become unmanageable.



Minimized Delays

Many supply chains – particularly those that haven't been enhanced with a supply chain application – are plagued by delays that can result in poor relationships and lost business. Late shipments from vendors, hold-ups on production lines, and logistical errors in distribution channels are all common issues that can negatively application a company's ability to satisfy customer demand for its products. With SCM software, all activities can be seamlessly coordinated and executed from start to finish, ensuring much higher levels of on-time delivery across the board.

Enhanced Collaboration

Imagine having the ability to know exactly what your suppliers and distributors are doing at all times – and vice versa. SCM software makes that possible by bridging the gap between disparate business software systems at remote locations to dramatically improve collaboration among supply chain partners. With SCM software, all participants can dynamically share vital information – such as demand trend reports, forecasts, inventory levels, order statuses, and transportation plans – in real-time. This type of instantaneous, unhindered communication and data-sharing will help keep all key stakeholders informed, so that supply chain processes can run as smoothly as possible.

Reduced Costs

Supply Chain Management software can help reduce overhead expenses in a variety of ways. It can, for example:

- Improve inventory management, facilitating the successful implementation of just-in-time stock models and eliminating the strain on real estate and financial resources incurred by the storage of excess components and finished goods
- Enable more effective demand planning, so production output levels can be set to most effectively address customer requirements – without the shortages that result in lost sales or wastes that drain budgets
- Improve relationships with vendors and distributors, so that purchasing and logistics professionals can identify cost-cutting opportunities such as volume discounts



Importance of E-Commerce

Ecommerce proved its importance based on the fact where time is essence. In the commercial markets, time plays an important role to both the business and consumers. From the business perspective, with less time spent during each transaction, more transaction can be achieved on the same day. As for the consumer, they will save up more time during their transaction. Because of this, Ecommerce steps in and replaced the traditional commerce method where a single transaction can cost both parties a lot of valuable time. With just a few clicks in minutes, a transaction or an order can be placed and completed via the internet with ease. For instance, a banking transaction can be completed through the Internet within a few minutes compared to the traditional banking method which may take up to hours. This fact obviously proves that Ecommerce is beneficial to both business and consumer wise as payment and documentations can be completed with greater efficiency.

From the business viewpoint, Ecommerce is much more cost effective compared to traditional commerce method. This is due to the fact where through Ecommerce, the cost for the middleperson to sell their products can be saved and diverted to another aspect of their business. One example is the giant computer enterprise, Dell, which practice such a method by running most of their business through internet without involving any third parties. Aside from that, marketing for Ecommerce can achieve a better customer to cost ratio as putting an advertisement on the internet is comparably much cheaper than putting up a roadside banner or filming a television commercial. For Ecommerce, the total overheads needed to run the business is significantly much less compared to the traditional commerce method. The reason due to that is where most of the cost can be reduced in Ecommerce. For example, in running an Ecommerce business, only a head office is needed rather than a head office with a few branches to run the business. In addition to that, most of the cost for staff, maintenance, communications and office rental can be substitute by a single cost, web hosting for the Ecommerce business

Advantage of E-Commerce

- Using E-Commerce, organization can expand their market to national and international markets with minimum capital investment. An organization can easily locate more customers, best suppliers and suitable business partners across the globe.
- E-Commerce helps organization to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.
- E-commerce improves the brand image of the company.
- E-commerce helps organization to provide better customer services.



- E-Commerce helps to simplify the business processes and make them faster and efficient.
- E-Commerce reduces paper work a lot.
- E-Commerce increased the productivity of the organization.

It supports "pull" type supply management. In "pull" type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing way.

The application of e-commerce on the supply chain will be felt in how work is done, including how areas of the supply chain interact, and in how supply chains operate between company and geographic boundaries. E-commerce affects all major areas of supply chain work in companies from design, through buying to fulfilment and service support. The major areas of work inside companies can be illustrated using a simple process map of a supply chain, as shown in Fig. 1. The process map shows the high-level flows and interactions between suppliers' suppliers and customers' customers. It can also be used to show where e-commerce will have Indirect procurement and direct procurement: e-commerce has a direct application on both indirect and its greatest application: direct procurement of goods and services. E-procurement has its greatest effect on change management and compliance. Direct procurement represents a bigger prize for most companies than indirect spend simply because of the size of direct spends. Here, the combination of e-commerce procurement solutions with existing ERP and MRP systems has the capacity to provide large efficiency savings Product and service design: e-commerce has the capacity to improve the quality of product design, reduce design time-scales and fundamentally improve the interaction between designers, engineers, Manufacturing: e-commerce solutions will also have an suppliers and manufacturing. application on manufacturing as companies are required to be more flexible and responsive in what they make and in the levels of mass customization that manufacturing systems can deliver. E-commerce can help manufacturing become more flexible and responsive, and ensure demand and supply planning are more effective Demand and supply planning: most people find it difficult to cope with planning when it involves more than a few variables. This is an area where computers, statistics and e-commerce will always be more capable – if they are used in the right way. Demand and supply planning systems are increasingly using e-commerce alongside their traditional software applications to improve the effectiveness of planning solutions.

E-commerce is also expected to allow much greater interaction between the planning systems in areas such as collaborative forecasting and replenishment (CPFR) and e-marketplaces Fulfilment and e-fulfilment: fulfilment remains an area of great promise for e-commerce solutions, but one that has largely underperformed its potential. E-Commerce has



the capacity through information, such as tracking and tracing, to revolutionize the way that goods and services are delivered. It has the capacity to virtualize inventory and to change fundamentally the relationship between end customers, retailers, wholesalers and manufacturers Service and support: service and support is another area where e-commerce has made some application but there is still potential for greater change. E-commerce has the capacity to transform the effectiveness of field service forces and to change the way that returns and repairs are managed. Like fulfilment, this is an area where the value proposition will drive radical change, but it will take time E-working; e-working is an area that will have a more immediate application on the supply chain. Most companies have already given thousands of their workers access to intranets and the Internet. They have given them e-working tools such as employee portals, knowledge management systems and computer-based training. Through e-mail they have revolutionized the way in which people work across boundaries of time and space. E-working capabilities have a significant application on the working of supply chains and on the ability of employees to manage complex events and issues in the supply chain.

E-commerce technology provides information visibility throughout the supply chain. The integration of production planning, scheduling, and inventory control with procurement process makes the loop complete as illustrated in Fig. 1. Because of information visibility, suppliers could possess the information of customer demands, in the mean time, customers can receive faster feedback of transaction status from their suppliers. Such strong application causes companies to incorporate the information visibility into their competitive advantage. E-commerce is already having a significant application on SCM. The application will increase over time as companies adopt e-commerce solutions more broadly and increasingly collaborate between companies and across countries. The broadening of e-commerce will be a gradual process, phased in over time; it will involve a lot of hard work. The benefits of supply chain improvements will be considerable, however, representing 5 to 15 per cent of overall supply chain costs [11]. Leading supply chain operators are likely to achieve collaboration with their key value chain partners far more speedily and effectively than their slower competitors. The benefits of cost savings and performance improvements will accrue to the companies that are the best at harnessing e-commerce solutions.

Conclusion

As Web technologies evolve, e-commerce has become a powerful and compelling enabler of supply chain integration that across a wide range of industries. The aspects of speed and connectivity of Internet technology have changed the nature of conducting business. Because e-commerce affects SCM, information visibility is achieved through connectivity among



trading partners, therefore, supply chain can be better managed. Integrating e-commerce into the existing supply chain is not only necessary for attaining companies' competitive advantages, but also for companies' survival in the globally competitive environment. that permitted actual online shopping including bidding and auctioning. Overall speaking, incorporating e-commerce into supply chain process could achieve the following advantages: reducing purchasing cycle time, cutting transaction cost, decreasing purchasing cost through the more competitive electronic marketplaces, enhancing the collaborations among suppliers and buyer through collaborative software, lowering inventory, fulfilling customers' demand faster, and boosting market access.

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