



A Study on Role of E-Commerce in Supply Chain Management

KEYWORDS

Electronic commerce, Supply chain management, Total Quality Management, etc.,

Mrs.B.Chitra

Head, Department of Commerce, PSG College of Arts & Science, Coimbatore - 641 014

ABSTRACT *Supply chain management is delivering the right product to the right place, at the right time and at the right price and is one of the most powerful engines of business transformation. It is one of the leading cost saving and revenue enhancement strategies in use today.*

At the end of trends that started off from Business Process Reengineering, Total Quality Management and ERP that have all addressed only the inner workings of an Organization, SCM aims at integrating the company's internal systems to those of its suppliers, partners and customers.

Electronic commerce, commonly known as e-commerce or e Commerce, or e-business consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks. E-commerce does not just mean trading and shopping on the Internet. It means business efficiency at all operation levels. Executives know it is critical to effect business operations, but until now quantifiable performance measures have been as scarce as the number of corporate executives who heard of the phrase "supply chain management" (SCM).

Introduction

Supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of the materials into intermediate and finished products, and the distribution of the 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. A supply chain is the sequence of events that is involved in getting the goods from one place to their final destination.

Supply Chain Management

Supply chain management is delivering the right product to the right place, at the right time and at the right price and is one of the most powerful engines of business transformation. It is one of the leading cost saving and revenue enhancement strategies in use today.

At the end of trends that started off from Business Process Reengineering, Total Quality Management and ERP that have all addressed only the inner workings of an Organization, SCM aims at integrating the company's internal systems to those of its suppliers, partners and customers.

Technologies such as the Internet, electronic data interchange, transportation and warehouse management software, including software that manages plant scheduling, demand forecasting, procurement, make SCM a versatile strategy to adopt.

Supply chain management (SCM) is the combination of art and science that goes into improving the way the company finds the raw components it needs to make a product or service and deliver it to customers. The following are five basic components of SCM.

1. Planning: It is the strategic portion of SCM. Companies need a strategy for managing all the resources that goes towards meeting customer demand for their product or service. A big piece of SCM planning is developing a set of standards to monitor the supply chain so that it is effi-

cient, costs less and delivers high quality and value to customers.

2. Source: Companies must choose suppliers to deliver the goods and services with which they create their product. Therefore, supply chain managers must develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships. And then, SCM managers can put together processes for managing their goods and services inventory, including receiving and verifying shipments, transferring them to the manufacturing facilities and authorizing supplier payments.

3. Make: Supply chain managers schedule the activities necessary for production, testing, packaging and preparation for delivery. It is the Standard process in the supply chain where companies are able to measure quality levels, production output and worker productivity.

4. Deliver: The part that many SCM insiders refer to as logistics, where companies coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments.

5. Return: Supply chain planners have to create a responsive and flexible network for receiving defective and excess products back from their customers and supporting customers who have problems with delivered products.

E-Commerce

Electronic commerce, commonly known as e-commerce or e Commerce, or e-business consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks. E-commerce does not just mean trading and shopping on the Internet. It means business efficiency at all operation levels. Executives know it is critical to effect business operations, but until now quantifiable performance measures have been as scarce as the number of corporate executives who heard of the phrase "supply chain management" (SCM).

The amount of trade conducted electronically has grown extraordinarily with widespread Internet usage. The use of commerce is conducted in this way, spurring and drawing on innovations in electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at some point in the transaction's lifecycle, although it can encompass a wider range of technologies such as e-mail as well.

Elements of Supply Chain Management



Source: www.Image_of_Supply_Chain_Management

Supply chain strategy

A characteristic which distinguishes the e-Commerce operation from more traditional channels is derived from the immediacy of the electronic connections. When an e-Commerce consumer purchases an item, the details of this transaction can be made visible to every link in the e-Commerce supply chain. A classic storefront may take a day or more to aggregate sales information from point-of-sale (POS) devices. The process of aggregation necessarily loses some information. Often this data is "massaged" by various organizations before being translated into demand signals which are then relayed to the supply chain again with the loss of more information.

Supply Chain Planning

Organizations are gradually adapting to supply chains increase in complexity, globalization, and to the fact that performance is more difficult to predict. Supply chain planners and managers today have roles that go beyond traditional operation duties and have to take more strategic steps to build fully integrated and resilient supply chains capable of generating competitive advantage while mitigating the risks associated with extended supply networks. Safety nets are being put in place to deal with supplier failures or distribution partners and all too often result in increased inventories that not only raise working capital but also clog up the warehouses and do not necessarily result in increased service levels. Air freight is reaching a new high in terms of expenditure and not only affects bottom lines but also margins. Therefore to deal with the unexpected, organizations need to look internally at their ability to become more agile, with smarter replenishment processes, inventory optimization techniques and advanced distribution planning capabilities.

Supply chain enterprise application

In today's corporate environment, enterprise applications are complex, scalable, distributed, component-based, and mission-critical. They may be deployed on a variety of plat-

forms across corporate networks, intranets, or the Internet. They are data-centric, user-friendly and must meet stringent requirements for security, administration, and maintenance. In short, they are highly complex systems.

Enterprise Application Requirements

Like any modern application, an enterprise application must be reliable, perform well, provide an intuitive and efficient user interface, and so on. But beyond these common qualities, it can be characterized by three specific attributes.

Large: A multi-user, multi-developer, multi-machine, multi-component application can manipulate massive data and utilize extensive parallel processing, network distributed resources, and complex logic. It can be deployed across multiple platforms and inter-operate with many other applications, and it is long lived.

Business Oriented: Its purpose is to meet specific business requirements. It encodes business policies, processes, rules, and entities which are developed in a business organization, and are deployed in a manner responsive to business needs.

Mission Critical: An enterprise application must be robust enough to sustain continuous operation. It must be extremely flexible for scalability and deployment, and allow efficient maintenance, monitoring, and administration.

These qualities clearly make the task of enterprise development extraordinarily challenging, and the trend is toward rapidly increasing demands. The rapid improvement of computer hardware and software, combined with global economic competition and opportunities have created an environment in which business systems must respond quickly and deliver unparalleled levels of performance. As these demands continue, developers must automate even more of their businesses, build their software even faster, serve more and more users, and process a rapidly growing mass of data by designing the following requirements.

- Its business goals.
- How soon it must be delivered.
- Its budget.
- How many people will develop, test, and maintain it.
- How many concurrent users it must support.
- The importance of performance and ease of using the hardware it must run on.
- Where it will be deployed.
- What security is required?
- How long you expect to use it?

Without a systematic way to understand the relation

ships among these complex and often conflicting requirements, it is hard to know where to begin. A simpler model can help reduce this complexity, and provide an organized way to design and build applications that chart an optimum course among the many requirements.

Supply chain asset management

Guarantee Asset Management (GAM) is the Complete Supply Chain Management of Fulfillment. Company with expertise in Storage and Inventory Management with GAM, business of all sizes and categories have their Supply Chain optimized to save themselves time and money. From the moment merchandise arrives at port until the moment it reaches the consumers hands, GAM's Supply Chain Management is there at every step along the way.

GAM's services include Account Management, Customized Reports, and a wide array of Storage Solutions, transportation, inventory management, fulfillment and Logistics.

Procurement process of Supply Chain Management

Strategic plans are drawn up with suppliers to support the manufacturing flow, management process and the development of new products. The desired outcome is a win-win relationship where both parties benefit, and a reduction in time is required for the design cycle and product development. Also, the purchasing function develops rapid communication systems, such as electronic data interchange (EDI) and Internet linkage to convey possible requirements more rapidly. Activities related to obtaining products and materials from outside suppliers involve resource planning, supply sourcing, negotiation, order placement, inbound transportation, storage, handling and quality assurance, many of which include the responsibility to coordinate with suppliers on matters of scheduling, supply continuity, hedging, and research into new sources or programs.

Product lifecycle management in supply chain management

Increasing customer demands, competition, and rising development costs are changing the face of business. To stay competitive, companies must transform their supply chains from cost-based, back-office functions to flexible operations designed to effectively address today's challenges. Product life-cycle management provides the framework for this enterprise wide optimization. The Internet is proving to be the most effective tool in transforming supply chains across all industries. Suppliers, distributors, manufacturers, and resellers now work together more closely and effectively than ever as a single, virtual organization. As a result, companies change both how they conduct business and how quickly customers receive products from suppliers.

Supply Chain Logistics Management

One of the special characteristics of supply chain logistics management is lower logistics and transportation cost, which is from about 8-15%, and in turn increases the asset turnover and reduces the inventory carrying costs. Better trade compliance of logistics in SCM, decreases custom fines and penalties. Further this would strengthen the customer relationship, and in turn will improve the goodwill and the customer's loyalty.

Electronic Supply Chain Management (ESCM)

The relationship between e-commerce and the supply chain is not a totally new component. It is the deployment of technology to improve supply chain management which is something new to the industry. Nevertheless, the profound influence of e-commerce and emerging e-business models in supply chain management are becoming apparent.

The importance of ICTs in enabling real-time or electronic supply chain management is likely to be one of the most enduring and profound changes e-commerce will have on modern business practices.

In the first five years of the twenty first century it was possible to trace a number of ongoing changes that were related to deployment of what had been classified as an e-SCM strategy. Strategies centre on minimising total cost of a transaction through the direct ordering and delivery process which also reinforce processes that stimulate supply efficiencies and ultimately result in customer satisfaction.

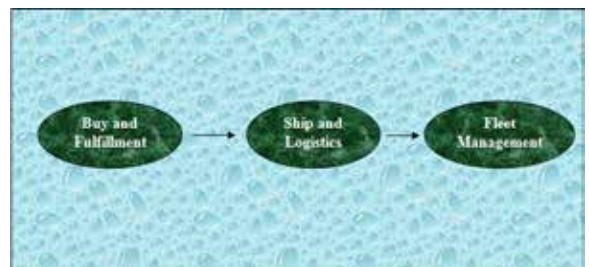
To assist progress towards fully understanding the role of e-commerce on the supply chain, there is a need to develop some conceptual frameworks with defined parameters. Without parameters the role of e-commerce may become blurred with other business processes. To understand e-commerce in the supply chain context there is a need to model e-commerce from both a customer's and a supplier's point of view.

Customer view of e-commerce supply chain



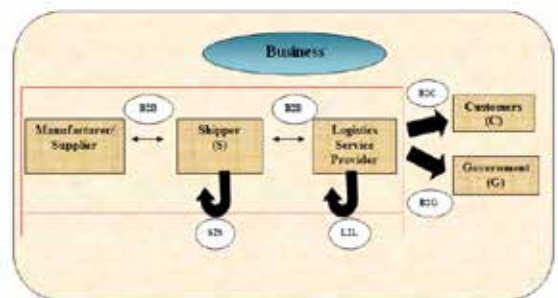
Source: www.Google.com

Supplier's view of e-commerce supply chain



Source: www.Google.com

The e-commerce supply chain – a systems transaction view



A more complex representation of the above exchanges may be depicted where an e-commerce transaction process involves more than one business. S2S refers to the exchange between different suppliers and L2L to the interface of one logistics service provider with another. Both L2L and S2S occur when a supplier outsources some or all of the activities to a shipping and logistics company or where a supplier, shipper or logistics company work with another company to source an "integrator" of supply chain services.

Customer's Perspective

With the emergence of the Internet, customers seek out specific products they want at the prices they are willing to pay. Modern supply chains focus on the customer. Manufacturers need to precisely gauge what a customer might

want, how to pack it and where to ship it. When the customer wants a change, they need to be prepared to shift directions quickly. As a result, business and manufacturing processes need to be agile and scalable.

The Internet supply chain will be a means of communicating and doing business with suppliers and customers. It is important to bear in mind that the customer is just a mouse click away from the competitors.

Enabled supply chains assist companies to optimize business processes both within and outside the four walls of the enterprise and to more efficiently deliver the new products customers want, when they want them and where they want them.

Need for e- SCM

Supply chain has been viewed as an inflexible series of events that somehow managed to get products out of the door. It often involved questionable inventory forecasts, rigid manufacturing plans and hypothetical shipping schedules. The Internet has changed all that. It has transformed the old-fashioned process into something closer to an exact science. An Internet enabled supply chain helps companies to

- ❖ Avoid costly disasters
- ❖ Reduce administrative overhead
- ❖ Reduce unnecessary inventory (thereby increasing working capital)
- ❖ To make it a more efficient channel
- ❖ Eliminate obsolete business processes
- ❖ Reap cost-cutting and revenue-producing benefits
- ❖ Speed up production and responsiveness to consumers
- ❖ To gain higher profit margins on finished goods

Effective integration of an Organizations supply chain can save millions, improve customer service and reduce inventories. The key to getting optimum value out of automating the supply chain is to make sure that the internal systems are working well before extending it over the Internet.

Facilitating Supply Chain Management with E-Commerce

To efficiently manage the supply chain, all functions and entities of the supply chain must be fully integrated. This integration can be made possible through the use of communication networks, which allow collaboration among the various entities and functions of the supply chain. This communication network is the heart of e-business.

The Internet is a collection of public and private communication network that links businesses to consumers and businesses to businesses. The speed and ease of the use of Internet can facilitate the flow of information from the retailer to the customer and vice versa, which can result in cost reductions associated with order processing and customer service. Another valuable network in e-business is a company intranet, which is based on Internet technology, but is used primarily within a single company or organization. The intranet allows internal users to share information with each other and may span multiple locations throughout the world. The intranet of e-business can be a very valuable tool that can lead to significant cost reductions in internal business processes because of the ease of accessing information from various functions within the organization. Intranets can also aid in the facilitating of the supply chain from retailer to customer. Marketing and sales, accounting and finance, and customer service are all linked together

through the company intranet. To facilitate all the other functions of the supply chain, two primary technologies of e-business are used, namely, extranets and electronic data interchange (EDI). Extranets are similar to intranets, but instead of solely being internal to the company, the extranet extends the company's intranet to other companies and organizations, such as suppliers, manufacturers, and distributors. EDI is a popular technology used to transfer information over the extranet. EDI is a key technology of e-business because it allows "computer-to-computer" exchange of standard transaction documents between two organizations over an extranet.

Managerial Challenges of Implementing E-Business

With all the benefits associated with implementing e-business to facilitate supply chain management, one would think companies would jump at the chance to reap the benefits of e-business. There are many managerial challenges associated with implementing e-business and its components. Implementing e-business can entail the use of considerable amount of capital resources. Capital outlays and resources are made to cover the initial investment, hardware and software requirements, salaries of information system specialists, and maintenance and updating costs of the system. These costs can be considerable and may deter some companies from implementing e-business. Today's customers expect orders to be filled much more quickly than in the past. Many distribution centers and warehouses, used to dealing with pallet-size orders, are not set up for dealing with a lot of single-item or open-case shipping.

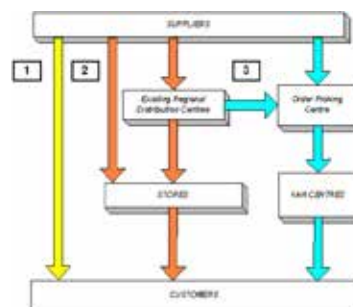
Tips to bear in mind while evaluating e-SCM initiative

Get Perspective: One should foresee the business as a whole including its current strategy and where it wants to go. Supply chain strategy is increasingly being integrated with overall corporate strategy.

Don't Underestimate Learning Costs: The cost of training people to use new software should not be underestimated. Sending information around the world takes lesser time than it takes to get into someone's mind.

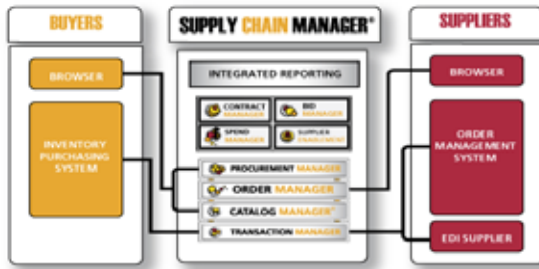
Link to existing architecture: Supply chain applications must link to existing enterprise resource planning applications. ERP serves as the nerve center of the organization. Ideally, it should be a single point of visibility for inventory and order taking.

Traditional channels of supply chain management:



Source: www.Google.com

Modern channels of supply chain management



Source : www.Google.com

Conclusion

By implementing networked and integrated supply-chain management processes, companies can reduce their inventory and associated costs, make better real-time forecasting decisions, speed the delivery of products and services, streamline the payment cycle, increase revenues, and improve service. Today's technology driven supply chain also enables customers to manage their own buying experiences and increase coordination and connectivity among supply partners.

REFERENCE

1. Waidringer, J. (2001) Complexity in Transportation and Logistics Systems - An Integrated approach to modelling and analysis, Report 52, Department of Transportation & Logistics, Chalmers University of technology, Gothenburg | 2. The Review of Business Information systems Volume 6, Number 2 | 3. Tilanus B, (1997) "Information Systems in Logistics and Transportation", Elsevier Science Oxford. |