



Future Directions of Logistics and SCM

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ABSTRACT :

In today's industrial scenario, all outdated methods of loading and unloading have changed. The industry is undergoing a new phase of modernized application, which is through supply chain margins in transportation, warehouse and distribution. The logistics function is the heart of the new strategic focus called supply chain management shifting channel power. Though powerful manufacturers once dictated the terms of business to retailers and other channel members, the tide has now turned. Large retailers, spurred by value-conscious consumers, are able to dictate terms to manufacturer. This shift from a manufacturer push strategy to a consumer pull strategy dramatically alters the way in which manufacturers distribute and market their products. Faster Cycle –Time –To –Market: Cycle–time–to–market is the time required to design, manufacture, and distribute a product. In today's economy, factors such as lowering technology costs and ever-demanding consumers have caused dramatic reduction in product cycle time. Products quickly become outdated or are limited by competitors. To remain competitive, manufacturers must embrace time-based competitive strategies and enhanced information technology applications. The decreasing cost of computing capacity has fuelled a new wave of adopting information technology as a business-enabling tool. The application of information technology is a critical element in the quest to compete effectively in global economy, which places a premium on timely and efficient operation and communications.

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Keywords:

1. Introduction

1.1 Logistics and Supply Chain Management

The Crew facilitates the flow of matter, energy and information through the Design Shop event or the Management Center environment. Logistics focuses on the flow of matter and energy. This includes providing the physical environment, tools, equipment, materials, food. It also calls for the continual refreshing and maintenance of these elements. [Of course, these all comprise messages bearing information... darn that interconnected, fractal, feedback driven, recursive nature of the universe!]. According to the Council of Logistics Management (CLM), logistics is the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. The second important word is Supply Chain Management: As the science of integrating the flow of goods and information from initial sourcing all the way through to delivery to the end user. Key activities within this end-to-end process include purchasing, production planning, order processing and

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fulfillment, inventory management, transportation, distribution, and customer service.

2.0 present scenario

Subjects of statutory rulings and taxation, which determine supply chains. With shrinking margins and increased competition, companies have to find a way to reduce cost and stay competitive. Most of the companies fail to understand that profits are not made on products, but on competitive efficiency and speed in making decisions and that handling change is the ultimate competitive advantage. Under these testing circumstances, what should a company do? Should they ape competition or adopt innovative strategies, which would have focus and make them more competitive. As part of the logistics industry, effective supply chains would mean a thorough analysis of the whole chain with emphasis on agility and being lean. Companies should consider the recession as an opportunity and not a threat. This presents an opportunity to weed the fat out of the supply chain, which has been eroding its bottom lines. By becoming agile what we mean is to outsource all non-core activity and concentrate on what the companies know best - their product. This would not only reduce their expenditure but also make them pretty competitive and have focus on developing markets. Companies should be optimistic and see this as an opportunity in order to reorganize and re-engineer processes and systems. Supply chain management is defined as the science of integrating the flow of goods and information from initial sourcing all the way through to delivery to the end user. Key activities within this end-to-end process include purchasing, production planning, order processing and fulfillment, inventory management, transportation, distribution, and customer service.

2.1 changing role of logistics

Logistics management has, if anything, grown much more complex ever since. Product life cycles have shortened customer behaviour has become very fickle and business environment as a whole is extremely volatile. Manufacturers can no longer push their products down the supply chain it is the customers who pull the product segment. Price and quality are no longer sufficient to thrive in this market; speed to market and flexibility, information has to freely flow throughout the supply chain – information not just about where the products are but also how the supply chain as a whole has been functioning.

2.1.1 Era of mass production

Production and distribution were viewed as a sequential chain of extremely specialized activities. Logistics came to be recognized as a distinctive function worth rise of mass production systems. The role of logistics was to ensure availability of raw materials, semi-finished and finished goods were a must across this chain to ensure its smooth functioning. Business environment was relatively stable and the mass production system ensured huge economies of scale for the manufacturers.

2.1.2 Era of Japanese system

Then entered the Japanese. The whole paradigm of mass production system came crumbling down. Suddenly companies scrambled to adopt Japanese philosophy in manufacturing and distribution – lean distribution, jit, kaizen and quality circles became key techniques.

Simultaneously the role of logistics underwent a paradigm shift. It became the cornerstone of business strategy – a key enabler for the new techniques.

3. Factors contributing to the changing role of logistics

In today's industrial scenario, all outdated methods of loading and unloading have changed. The industry is undergoing a new phase of modernized application, which is through supply chain margins in transportation, warehouse and distribution. The logistics function is the heart of the new strategic focus called supply chain management Shifting Channel Power, Though powerful manufacturers once dictated the terms of business to

retailers and other channel members, the tide has now turned. Large retailers, spurred by value-conscious consumers, are able to dictate terms to manufacturer. This shift from a manufacturer push strategy to a consumer pull strategy dramatically alters the way in which manufacturers distribute and market their products. Faster Cycle –Time –To –Market, Cycle–time–to–market is the time required to design, manufacture, and distribute a product. In today's economy, factors such as lowering technology costs and ever-demanding consumers have caused dramatic reduction in product cycle time. Products quickly become outdated or are limited by competitors. To remain competitive, manufacturers must embrace time-based competitive strategies Enhanced information technology applications. With the end of the cold war and the passage of trade treaties such as NEFTA and GATT, the global economy is more of a reality than ever. As companies look overseas for supply sources, manufacturing sites and buyers of products and services, greater complexity is added to the logistics function.

4. Tools and elements of supply chain and logistics management

4.1 Integrated logistics strategy: Creating synchronous business processes that instantaneously adjust to changes in supply and demand throughout the entire chain, analysis of distribution processes, agents or IPO's and rationalization of current global manufacturing and sourcing practices.

4.2 Customer/Supplier Partnering: Anticipation of customer and market needs through direct involvement, defining supplier requirements beyond quality and on-time delivery, supplier qualification and certification, supplier rating systems, supplier competency development and joint improvement programmes are need of the day.

4.3 Value added distribution: Development and implementation of innovative supply chain practices such as in-plant stores, turnkey services point-of use replenishment, value stream kitting, bonded pipelining, exportable inventory management, invoice less purchasing, pipeline pay points, zero inventory systems, and JIT consumption.

4.4 Simplified purchasing practices: Specification and design of non-traditional supplier practices such as reduction of non-value transactions, MRP II simplification, "breadman" auto replenishment, ship to point-of-use, co-located suppliers, EDI, low dollar PO centers, pay-on-receipt, credit card purchasing and transparent customer-supplier business processes.

4.5 Global Manufacturing and logistics: This includes worldwide design, manufacturing, plant loading and sourcing strategies, integration of warrantee/repair and refurbishment, spare parts strategies, inter-plant planning systems, analysis of global versus local supplier networks and commodity team sourcing.

5. Performance of logistics elements

The new critical journey to world-class LOGISTICS performance is characterized by three stages: integration, collaboration, and synchronization.

5.1 Integration: A company achieves integration when it attains operational excellence within the enterprise and erases internal organizational barriers that inhibit good supply chain management. Functions such as purchasing, manufacturing, distribution, product design, sales and marketing are managed as integrated activities.

5.2 Collaboration: After internal integration is achieved, a company must turn its attention to its customers and suppliers, a strategy we call collaboration. In this stage, cross-company initiatives such as collaborative planning, electronic data interchange (EDI) and supplier managed inventory begin to make an impact. The benefits of these programmes are significant, but relatively localized and limited.

5.3 Synchronization: The last leg of the journey is made by synchronizing the supply chain planning and executing activities across the entire supply chain. Considered unattainable until recently, advances in supply

chain technologies have made the communication of real-time customer and supplier information potentially available to all participants in the supply chain. Synchronization entails conducting the performance of the supply chain as a whole, and being attuned to the rhythm of customer demand. Strategic alliances, widespread information sharing and viability to supply chain partners' information systems are all characteristics of companies in this stage of development. Another characteristic of these companies is a tremendous competitive gap between them and their industry rivals. Making supply chain synchronization a reality requires deep expertise that extends beyond simply end-to-end supply chain functional knowledge. Also needed is the experience that spans the vertical dimension of an organization- from the top-level business strategies to the tactical and execution issues.

6. Latest developments in logistics industry

The emergence of internet has given rise to a new breed of e-logistics companies, which provide a spectrum of solutions. The web based logistics portals seek to bring together shippers, 3pls and the other interested parties to provide more effective collaboration. Increased competencies and growing complexity of the logistics function has led many companies to outsource logistics activities like transportation, and inventory management. This developed the concept of 3PLs (third party logistics). Services provided by 3PLs: 1) Transportation management: Transportation planning and management is a basic service provided by 3PLs. they provide inbound and outbound traffic control, route optimization, delivery using multiple modes of transportation and payment services. 2) Warehouse management: The various functions in this service include inventory mgmt., cross docking, metering, picking etc. 3) Value added services: This includes light assembly, handling reverse logistics, packing and labeling, kitting, customer brokering, etc.

7 role of information technology to logistics

7.1 Development of e-commerce & e-logistics.

The routing of vehicles and the management of logistics operations in any company that services a fairly large geographical area can easily become quite a very complex task. The task can be simplified by the applying Geographic Information Systems, which automatically reduce the complexity by bringing out subtle geographic patterns and relationships that can form the basis of good decisions. Systems like Arc Logistics Route can take pain out of applications like Vehicle Tracking and Dispatch, Route Analysis, Warehouse Operations, Facilities and Depot Management, Routing and Scheduling. India too would grow into a mature GIS market where data would not longer be a constraint. GISs endeavor to unleash the inherent potential of the geography in most data sets we deal with today. GIS can help us streamline logistics related business processes like inventory management, fleet / truck management and warehousing applications. ESRI has always had strong networking and analysis tools with products like Arc Network and/INFO.ESRI has expanded this feature-loaded toolkit with other focused products like Arc Logistics Route, Route Xpert and Net Engine for networking and logistics operations. Sears Roebuck and Co., one of the largest retail chains in the United States recently put to use ESRI GIS software to take care of in-warehouse routing and direct delivery systems. The system not only functioned well but also received recognition for its efficiency and success at its work. Corporations typically want to keep track of their transport vehicles' locations and the status of goods in them. Mobile communication networks, customized to suit the logistics business, offer a level of interactivity not possible with conventional systems. Connecting the truck driver to a central server through a wireless network enables real time data exchange that can help in cutting down on time and resource utilization. An instant messaging system, when used with a variety of web-enabled services like WAP, SMS, pager etc, provides the vital link between the driver on the road and the management. Integrating a global positioning system (GPS) with the messenger, automatic transfer of information on the location of the truck is possible, allowing total fleet visibility to dispatchers, store managers and the management. The messaging service is used to provide instructions to the driver while he is on the road. This enables dynamic routing, reducing the number of trips made and increasing the utilization levels. Further value addition is achieved, by making available to the driver, useful data like city maps, traffic positions, weather predictions etc, through the same wireless link. The required information needs to be accessed from a wide range of sources and

consolidated into a digest for quick access. A content managing server provides such access through simple menu driven or icon based interfaces. Voice enabling eliminates the need for typing which would offer the best alternative for drivers on the move Efficient Transactions. The flood of paper required to support transportation logistics presents an opportunity for trucking companies seeking competitive advantage. Hundreds of thousands of bills of lading and similar documents flood a large carrier daily. Carriers must process the documentation quickly to speed shipments on their way. The combination of high document volume, tight schedules, and manual processing drives up costs in a functional area that delivers no inherent value to the customer. Portable data files, the next generation bar code technology, offer carriers and shippers an economical and simple way to transmit information about a shipment. Shippers can print a special symbol on a traditional bill of lading (BOL) using standard printers. Automatic hand held scanners employed by the truck driver inputs the entire BOL in less than a second. The information is transferred to the main company server through the data uploading facility. Scanning eliminates thousands of hours of labour, increases accuracy, and makes information immediately available to speed shipments on their way. It is also used to provide a proof of delivery or payment. Integrating scanning with a billing and administrative work, automates the billing process. Automated billing servers provide detailed logs, bills and customer records. Special rules for preferred customers can be built into the system. Using data transferred from the point of contact, transactions are completed instantaneously, greatly reducing the time required and thus saving on costs.

7.2 Improved Information Exchange

Large corporations find it quite difficult to provide up to date information to their mobile personnel. Using an enterprise solution the corporation can offer secure access to its intranet to its personnel. An Internet file storage server enables uploading or downloading of files from the company's server on to mobile devices. This helps personnel make decisions on the need for supplies, on the site, using the latest information available and order for them immediately. Warehouses or suppliers could be instantly messaged to send the supplies directly to the site without requiring going through the main office, thus eliminating the need for temporary storage. An efficient calendar service prompts customers/associates on payment/shipment schedules. Integration of personal calendaring with group scheduling helps create a powerful web-based messaging solution. Periodic ordering can be automated.

7.3 Enhanced relations

Major corporations are conducting a substantial part of their transactions over the net to find the best bargains. Most corporate personnel have a mobile access to the Internet. A prominent presence on the net is thus vital for all service providers. Enabling customers to access relevant information using their mobile hand held devices acts as a value added service that helps improve customer satisfaction. Access to a compilation of industry specific technical data from various sources can be passed on to dealers or suppliers. This helps maintain a high level of awareness of industry standards and innovations amongst them. Providing suppliers or customer's real time data on shipment schedules helps them plan their activities better creating mutual benefits. Providing them with regular alerts can help maintain good relations.

Conclusion

Mobile computing and wireless technologies have already seen an explosive growth in the trucking industry. The needs of large fleets can be efficiently managed only by such solutions. A mobile portal can also go a long way in enhancing the value of current investment in IT. It helps in increasing efficiencies and reducing costs, providing a competitive edge. A lot of scope for further enhancing these solutions is present. With an increasing number of companies adopting these advanced technologies, missing out could be fatal. To compete with these highly efficient operators using older technologies is not possible. Mobile Internet access is the way of the future and

companies must upgrade to remain at the cutting edge of technology. Transport companies and logistics departments of corporations are increasingly turning to mobile computing technologies to improve the quality and speed of their service. Platform independent mobile access increases the reach of current technology investment and helps in bringing the power of computing to the point of activity. Mobile computing solutions not only help improve the flexibility and speed of response but also help improve efficiency, resulting in substantial cost saving. Transport companies can now keep track of the shipments in real time and improve fleet management. For shippers, this means better quality of service and more reliability, which can help in better inventory management based on Just in Time (JIT) concepts

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