

Role of Third Party Logistics Providers with Advanced it to Increase Customer Satisfaction in Supply Chain Integration

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ABSTRACT

The main area of change in organizational strategy is the extensive use of third party logistics providers who are using advanced information technology tools and integration of supply chain to enhance customer satisfaction. By outsourcing the logistics operations, companies can focus on their core competencies and other important areas of organization which can't be outsourced. The analysis of this paper is conducted by discussing different concepts of supply chain integration, customer satisfaction, advanced information technology and third party logistics providers, and their impact on customer satisfaction with theoretical framework. An analytical model is also presented.

Key words: supply chain integration, third party logistics, customer satisfaction, advanced information technology.

1. INTRODUCTION

Due to the rapid changing in the business environment the instability and complexity has increased than ever before. Therefore, many organizations have made frequent changes in their organizational structures and business processes to remain in the competition. In last few years there has been considerable interest in the growth of third party logistics providers all over the world. Companies are rapidly focusing on one-stop global logistics services. The 3PL's can improve the logistics processes by allowing the companies to focus on their core competencies that ultimately reduce the business costs and increase the customer satisfaction. Typically these firms (3PLs) provide some services like warehousing operations, freight

payments and auditing, carrier selection and rate negotiation (Regan and Song, 2000). In addition to these services third party logistics providers may develop the information system, manage the inventory and also provide customer order fulfillment services (Boyson *et al*, 1999). This paper is based on concepts related to the third party logistics providers and use of information technology in the supply chain integration to improve logistics process that is concerned with the increased customer satisfaction.

According to LaLonde and Masters (1994), Information technology is necessary to support logistics processes. Information Technology has automated most of the routine logistics activities that enables managers to focus on strategic issues and core competencies. These activities such as warehousing, packaging, and distribution, are enabled and supported by the use of Information Technology (Lewis and Talalayevsky, 1997). Also according to some studies the Information Technology could improve service quality, effectiveness, cost, flexibility, and logistics efficiency (Bhatnagar *et al.*, 1999). By using advanced information technology, like Internet, EDI, EOS, POS etc, that the parties involved in the supply chain could not only get requirements of customers timely and effectively and respond to the information to meet the customer's expectations, but also reduce the lead time of order to improve service level of enterprises (Guo and Han, 2010).

For third party logistics provider, the Information Technology is a critical factor because the logistics provider must incorporate systems with its customers to increase satisfaction and performance of the business processes. The lack of consideration of Information Technology as a main component of logistics providing solutions is a major deficiency of the third party logistics literature (Lewis and Talalayevsky, 2000). According to Dawe, (1994) in future logistics systems Information Technology was considered a key factor, but due to risk of organizational damage, lack of verified effectiveness and high technology cost, many managers still caution the use of Information Technology (Sum *et al.* 2001). This is why the rate of usage for more advanced information technology by current logistics user has a low acceptance (Motwani *et al.*, 2000).

The following research questions are central to this study:

How 3PL providers with advanced IT are integrating the supply chain?

What is the impact of 3PL with advanced IT to increase customer satisfaction?

The purpose with this paper is to understand the role of third party logistics providers in context of advanced Information Technology. And also to know that how third party logistics providers while using advance information technology can integrate supply chain in order to enhance customer satisfaction.

1.1. Methodology

This study is focused mainly on the advance information technology usage in the third party logistics providers to enhance the customer satisfaction level. Also there is no usage of any

empirical information. The theoretical framework is analyzed with the different concepts of supply chain, 3PL and advanced information technology.

2. THEORETICAL FRAMEWORK

For logistics service providers the Information Technology is one of the productive tools that enhance competence while decreasing the cost. The proper use of Information Technology in supply chain integration can improve provision of services to supply chain partners that have ultimately effect on the customer satisfaction and business performance and it also to increase operational competitiveness, flexibility and productivity (Daugherty et al. 1995). So theory is extracted on the basis of research questions and to support the purpose of this paper.

2.1. Third Party Logistics Providers

Third party logistics has many interpretations and definitions, according to Berglund et al. (1999), Activities consisting of at least execution of transportation and management, and warehousing (if warehousing is part of the process) on behalf of the shipper are carried out by 3PL's. Lieb et al. (1993), define third party logistics as the external company to carry out the logistics functions that have conventionally been executed within an organization. Third party logistics is becoming more and more common in Europe and USA and now third party logistics is accepted business practice (Laarhoven *et al.*, 2000). Out sourcing of the logistics services enables companies to control its resources, spread its risks and focus on issues that are very much crucial to its existence and future growth (Sink and Labgley, 1997).

2.1.1. Service Provided by Third Party Logistics Providers:

Typically following are the services provided by 3PL providers according to Regan and Song, (2000);

First he discussed about Transportation / Distribution sector of 3PL that they are providing general trucking services (TL, LTL), inter model transportation services (rail, ocean, air freight), specialized services (bulk, tank, hazardous material, refrigerated goods etc.), time constrained services (JIT, over night, same day etc.), and shipment tracking and tracing.

Also 3PL is looking towards the Warehousing / Distribution sector as Public / Contract / Regional warehouse, Operation Technology (bar coding, radio frequency, VMI etc.), Value-added services (cross-docking, freight consolidation, pick & pack etc.), Order processing and fulfillment. 3PL is also providing Custom Services like Custom Brokerage, Duty Drawback. Of course the IT Support which includes EDI capability, Logistics information system & other software and Web-based solution.

In Product Support Services 3PL is providing Reverse Logistics, Value-added services (package, label, mark, test, assembly etc.).

Last but not the least 3PL offers Logistics Management / Consulting including Fleet operation, Distribution network design, Carrier selection / negotiation / routing, Facility location analysis / selection / design and Inventory management.

2.2. Information Technology

Information technology is defined by Bagchi and Skjoett-Larsen (2002), as a wide range of increasingly convergent and linked technologies that process the information as well as the information that business generates and use.

IT systems are ever more required to perform activities more gracefully (Sorensen and Buatsi 2002). Using information technology in an organization has changed form being simply a tool for handling transactions to a weapon that can influence an organization’s competitive position (Blanton et al., 1992).

2.3. Advanced Information Technology and Third Party Logistics

The application of information technology is gradually spreading in most areas of the companies specially to the logistics process. Information Technology is a vital element for third party logistics performance because the integration of logistics provider systems with its clients is must. Information Technology links members of a supply chain, such as transportation firms, distributors, manufacturers, and retailers, as it automates some components of the logistics workload, such as order status inquires, shipment tracking, inventory management and order processing (Vaidyanathan, 2005). Transactions costs can be decreased and supply chain participants can also manage the increased complications if considerable Information Technology improvements are made (Lewis and Talalayevsky, 2000).

Now logistics user firms are more and more relying on 3PL’s to utilize their advanced Information Technologies. Therefore, Information Technology in 3PL firms plays vital role to synchronize complex supply chain activities across logistics users and their customers, and works as a bridge of connecting customers in supply chain and logistics users (Wang *et al.*, 2005).

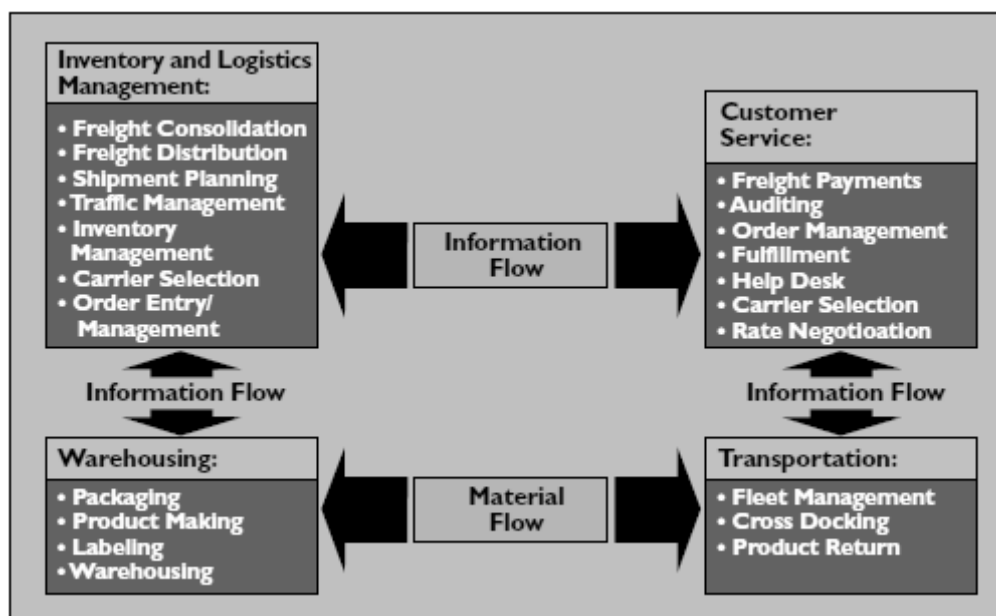


Figure 1: Role of Information Technology in Information Flow

Source: Vaidyanathan, 2005.

2.4. Customer Satisfaction

Philip Kotler pointed out that the satisfaction means one person's sense of disappointment or sense of joyfulness by comparing his perceptive effect to the service or product with his expectation. In today's any business management strategy customer satisfaction is accepted as one of the most important element. In an economically challenging environment understanding customers and providing outstanding value and satisfaction, even to the point of above expectations, is essential because survival is increasingly difficult across a whole range of businesses (Ryding, 2010). Why customer satisfaction should lead to better performance; there are many reasons. High customer satisfaction should indicate insulation of current customers from competitive efforts, lower costs of attracting new customers, lower costs of future transactions, increased loyalty from the customers, enhanced goodwill for the firm and reduced failure costs (Anderson *et al*, 1994).

2.5. Advanced Information Technology Impact on Customer Satisfaction

The saturation of markets, globalization of competition, and development of information technology has not only increased customer awareness also created such circumstances where long term success is no longer achieved through qualities and optimized product price. Alternatively, companies build their achievement on a long-term customer relationship (Atalik and Arslan, 2009). According to Hyvönen, (2007), newer information technology innovations refers to advanced information technology like supply chain management and customer relationship management, etc. So, adoption of advanced information technology will lead to increased customer satisfaction if an organization has customer focused strategy. In an organization with customer focused strategy the employees are responsive to customer requirements and are encouraged to be innovative. Advanced information system is vital to ensure that the managers have the timely information necessary to cope with growing changes in the processes and product design to fulfill the customer requirements and manages these tasks effectively (Bouwens and Abernethy, 2000). The special benefit of advanced information technology is to make real time data extensively available through such tools as Enterprise Resource Planning (ERP), Electronic Data interchange (EDI) and customer relationship management and the ability to link one activity with another. These tools not only improve the business processes but also build infrastructure for automated information exchange between suppliers and customers that is linked with increased customer profitability/satisfaction (Porter and Millar, 1985).

2.6. Supply Chain Integration

The degree to which a manufacturer collaboratively manages intra and inter-organization processes and strategically works together with its supply chain partners is called supply chain integration. The goal is to provide maximum value to the customer at high speed and low cost, and to achieve effective and efficient flow of information, services and products, money and decision (Flynn *et al*, 2010). Supply chain integration in particular implies that business processes should be interconnected both within and outside the company boundaries and streamlined, and is strictly related to coordination mechanisms (Romano, 2003).

2.7. Supply Chain Integration by Third Party Logistics Providers through Advanced Information Technology

The degree of integration between supply chain partners is also impacted by the usage of advanced information technology services (Gustin *et al*, 1995). The technologies used in supply chain integration have impact on coordination of logistics activities and information sharing within the organization. According to some studies it is noted that higher level of integration have generally achieved by third party logistics providers. Also third party logistics providers seek longer term relationships and higher level of integration with partners through adaptation of advanced information technologies in order to improve the integration between supply chain partners (Patterson *et al.*, 2004). Third party logistics providers are offering advanced information technology and broader global coverage. So companies need a state-of-the-art third party logistics provider with a wealth of information technology deployment experience to achieve optimal information flow to efficiently integrate the supply chain (Vaidyanathan, 2005).

3. ANALYSIS

In analysis the research questions: “How 3PL providers with advanced information technology are integrating the supply chain and what is the impact of third party logistics to increase customer satisfaction?” will be answered.

3.1. Role of Third Party Logistics in Supply Chain

Third party logistics service providers can help to integrate supply chain i.e. from supplies of raw material till supplies to end consumer. 3PL can perform this job much better than that of company’s own transport without any hurdles and they have nothing to do with the company issues but to supply the material or finished products. As a lot of research articles are saying that by adopting the services of 3PL’s company can focus on other important issues by outsourcing this activity. This activity is easy to outsource instead of outsourcing the production process or company marketing campaigns. TPL provides many services which includes shipment consolidation, order fulfillment, warehouse management, fleet management, product returns, rate negotiation, carrier selection, logistics information systems, inventory management, product assembly and order processing (Bhatnagar *et al*, 1999). 3PL’s prime objective is to deliver the products Full and On Time (FOT) and today’s customer require that all the products should be delivered on time. When it comes to supplies of raw material for plant, the production house also require every material on time because they can’t bear a delay of even single minute to optimize its production level up to maximum level. Because if the production unit will deliver the finished goods on time that will be supplied to warehouses on time by third party logistics service providers, then equally it will be supplied to end customers to achieve customer satisfaction. If customer satisfaction would not be there obviously company will have to bear lose in sales. It will also affect some other factors like goodwill of the company etc. and then this may divert their attention and from other equally important issues like marketing campaigns, costing and budgeting processes, production units and other important company operations which can’t be outsourced or can’t be given to third parties (Sink and Langley, 1997).

3.2. Third Party Logistics with Advanced Information Technology

When it comes to usage of Information Technology by the third party logistics service providers, these companies are equally efficient in IT as well. Today most of the companies are using Enterprise Resource Planning (ERP) software as important IT tool to satisfy its customers as described by Porter and Millar, (1985) and suppliers at both ends. Most of the companies have such an efficient coordination with their clients and customers that their IT system is integrated with each other that as any request is entered in their client's database, the logistics company automatically knows it that their client needs raw material from its supplier. Like wise when customer of production house entered an order entry in their database the logistic company automatically knows it supply them finished products from plant warehouse. To significantly enhance the performance of the supply chain system sharing of information between the supply chain members using EDI technology should be improved to increase the shipment performance of suppliers and decrease the uncertainty (Srinivasan et al., 1994). By using information technology tools they are helping the companies to enhance their customer satisfaction for on time delivery without any delays and any documentation process or any procedural delay.

3.3. Third Party Logistics to Integrate Supply Chain with Advanced Information Technology

By using advanced information technology 3PL's are integrating supply chain different process from procurement of raw material till supplies of finished goods to end user. Also a lot of third party logistics service provider companies are offering services of warehousing and value adding in the company products to save the company time. Some times 3PL's are doing this job at customer site by providing their own staff for warehousing operation to satisfy customers. According to Lewis and Talalayevsky, (2000) through advanced information technology tools, transactions cost between the supply chain partners can be decreased and some complications can also be handled/manages if considerable Information Technology improvements are made. Third party logistic service provider can also help companies by installing some devices at the client sites to ensure the timely delivery of products at their sites/places/stores. This system could be efficient enough that head office of 3PL and product senders should immediately know that their products have been delivered to customer. 3PL can also introduce warehousing management system that helps the customer warehouse while stock taking process and IT audit of physically available products. 3PL can introduce demand forecasting management system with the customer and also with its client that helps them to know about their demand. The use of IT help to supervise different activities of supply chain by offering information about what is accessible in the warehouse, what type of product is needed, what is in the production process, and what is entering and going out from the warehouse and customer places (Lancioni et al., 2000). So that they can forecast about their demand and can fulfill the customer demand. Therefore, seller can replenish the stock immediately and by doing this they can really enhance their customer satisfaction.

3.4. Third Party Logistics Impact on Customer Satisfaction with Advanced Information Technology:

Customer satisfaction is done by knowing the customer expectation. What the customer is requiring? It should be completed with all aspects and full in quantity and should reach at customer place timely. The special benefit of advanced information technology is to make real time data extensively available through such tools as Enterprise Resource Planning (ERP), Electronic Data interchange (EDI) and customer relationship management and the ability to link one activity with another. These tools not only improve the business processes but also build infrastructure for automated information exchange between suppliers and customers that is linked with increased customer profitability/satisfaction (Porter and Millar, 1985).

Customer satisfaction can also be done by efficient customer services by third party logistic service providers on behalf of the company by providing reverse logistic services. Providing after sales services at door step of customer within no time on customer's single phone or single email should be sufficient enough to respond back to customer immediately. 3PL's can also have online feed back and complaint system for their customers. How much 3PL can satisfy the customer? This can be measure with the help of two factors; service level and service ability of the company. If 3PL service provider has good service level and ability to serve the customer by giving good customer services actually to both of its customers, client and consumer of product. If they are performing well giving on time and full delivery, good customer services, IT system, after sales service, feed back system, goods tracking system, efficient logistics with all aspects according to the research by Regan and Song, (2000) then they can really satisfy the customers, not only satisfy they can enhance the customer satisfaction. So, 3PL's with advanced information technology can increase the customer satisfaction.

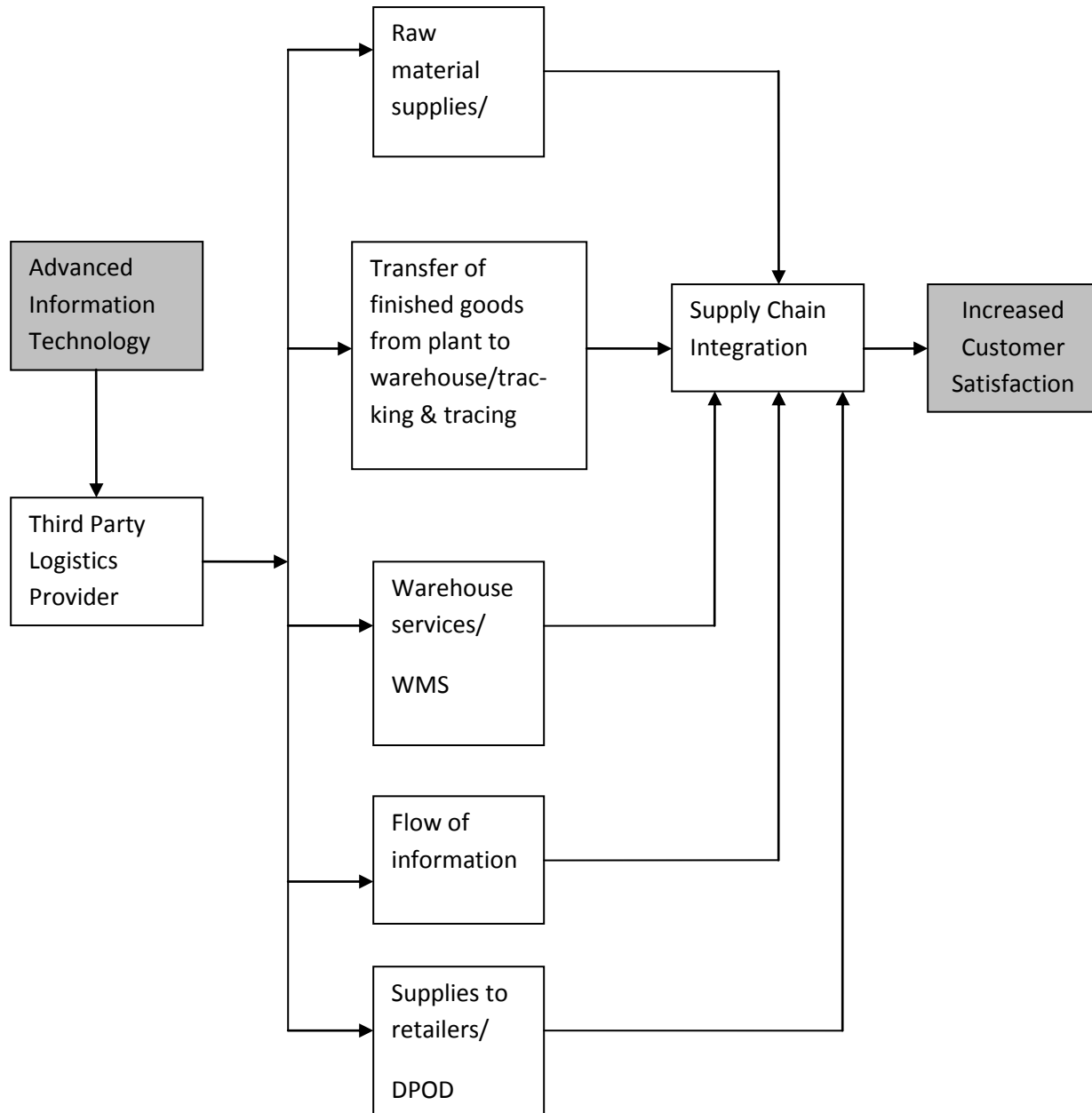


Figure 2: Analytical findings model

Here in the above model some of the features of supply chain integration are shown for understanding the supply chain integration. As the above model is representing that how third party logistics providers are integrating supply chain to satisfy customers. But if advanced information technology tools are used by third party logistics providers then level of customer satisfaction will be increased. Also there is strong evidence as different authors namely Atalik and Arslan, Hyvonen, Bouwens and Abernethy, and Porter and Millar are also strongly

supporting this argument of enhanced customer satisfaction by 3PL with advanced information technology.

4. CONCLUSION

This study concludes that third party logistics providers really have important position in any company. Third party logistics providers are really helpful to enhance the customer satisfaction and to integrate the different processes of supply chain by using advanced tools of information technology. Logistics operations can be outsourced to reduce the capital investments and to concentrate towards other important issues of the company. 3PL has significant role in supply chain integration and has greater impact on customer satisfaction with the help of advanced information technology tools. This study reflects that customer satisfaction level can be increased by using 3PL with advanced information technology.

Also the study found that third party logistics service providers are really helping in improving the company's logistics efficiency to enhance the customer satisfaction to integrate supply chain. It means putting together different processes of supply chain to make it much more efficient and effective with the help of advanced information technology. Third party logistics service providers also helping companies in their transportation/distribution, customer services, warehousing, IT support, route planning, reduction in operational budget and providing value added services to enhance customer satisfaction level.

This study may help organizations and 3PL's to enhance the customer satisfaction level with the help of advanced information technology to maintain their competitive position in the market. This study also motives researchers to work more on logistics outsourcing.

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