4PL In Supply Chain Management (SCM) System

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INTRODUCTION

Today, Globalization has made the trading of products and services very relevant to the world. It has revolutionized the world over last few decades. The company can fulfill the needs of its customers very effectively by the help of the new technologies being innovated in the field of merchandising. By the help of contrived flow of information, physical distribution and money, the delivery of the products and services can be performed from the raw materials to the end customers.

Supply chain comprises of the network of facility and arrangement options- from the procurement of raw materials to transformation into final products and ultimately distribution of these finished products to the end customer.

The regulation of this network can be achievable because of Supply Chain Management (SCM). It encompasses the movement of goods to and from the partner organizations holistically. The integration of demand and supply management can be made possible through SCM.

OBJECTIVES OF THE STUDY

This research paper studies various factors that will influence the improvement in the style and technique in the transportation system and this is better for the value of the manufacturer if these companies use this service to deliver the products to the end customers. This study is completely based on desktop research.

EVOLUTION OF SCM

The concept of SCM had been pioneered by the shipyards of Japan in 1950s. Later, the technique of SCM was used in the car manufacturing companies and in particular was initiated again in Japan by Toyota.

To sustain in the competitive environment and increase the market share and profitability, the manufacturing companies had to:

• Minimise the costs of production on a continuing basis. • Introduce new technologies. • Improve quality, and
• Be able to concentrate on what they do best.

But the following factors were the main hurdles in achieving the above targets:

1) Cost- Bids were based on designs and to which suppliers made no input as they thought that they maybe hard and expensive to build and assemble. Additionally, low bids won – so suppliers were encouraged to bid low. But low prices were unsustainable – so they had to increase prices by some other means.

2) The **Assembler** took no interest in the supplier because they didn't understand underlying costs – which may be high. They thought low price meant low cost – so they attacked the margin. They gave short-term contract – so no chance of supplier investing to reduce underlying costs.

3) Technologies- Suppliers had no money to invest in new technologies.

4) Qualities – It starts with the design – which may be faulty and not fit with other suppliers. Also, it needed investment in people and systems – but there was no money as the overheads attacked.

5) The **Assembler** couldn't concentrate on what it did best because it was too busy trying to do everything!

So to solve the above problems and get a perfect solution, the concept of SCM was introduced in the business.

WHAT ARE LOGISTICS?

The success of SCM depends on the delivery of the right product at the right place at the right time and in the right condition. Here, the term Logistics comes in effect. Logistics has always been a critical part as one of the 4 P's in Marketing (Product, Price, Place and Promotion). The 'Place' component ensures that the product is at the right place, at the right time, in the right quantity and the right quality.

It deals with the effective management of the flow of the goods, services, information including the energy and people from the point of origin to the end customer at the right place, time and also by the right method. It involves the integration of information, warehousing, transportation, inventory, material handling and packaging.

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It received its recognition during the World War-II as a system to manage the effective distribution of machinery and supply of troops. With the evolution of North-American economies during 1970s and 1980s, the transportation deregulation built the competitive landscape of the logistics.
The warehousing companies came as the joint venture with the transporting companies to gain the full-service solution capacity towards their customers. And this was the beginning of the Third Party Logistics (3PL).

3PL

Third Party Logistics (3PL) is the management of logistic services beyond transportations across multiple links in Supply Chain. A 3PL provider acts as the third party between the buyer (user) and seller (manufacturer). These include inbound freight, customs and freight consolidation, public warehousing, contract warehousing, order fulfilment, distribution, and management of outbound freight to the client's customers. The **3PL Provider** manages and executes these particular logistics functions using its own assets and resources, on behalf of the client company.
In the 80s, there was increased globalization and an increased use of IT. These trends resulted in increased demands on firms and possibilities for companies to operate more competitively. Some successful 3PL companies emerged, such as DHL/Exel, Kuehne + Nagel, Schenker , UPS, Panalpina, C.H. Robinson, TNT Logistics, Schneider, and NYK Logistics.
By adopting this ideology, the business firms:

- Had not to worry about investing in trucks, development and training.
- Were able to focus on their strengths.
- Were able to reach more customers more effectively.

Therefore, it revolutionised the market and many companies came forward for this technology.
But despite of having so many advantages of 3PL solutions, the expected benefits have not always been realized. According to 1994 Andersen Consulting Survey of 250 organizations in UK, it was found that on an average; only one-third respondents felt that their initial expectations of 3PL providers were being met.
Some of the problems in 3PL- like the unmanageable complexity in the supply chain, insufficient definition of tasks and responsibilities within company networks, the slow implementation of optimisation activities because of poor information and coordination management lead the evolution of 4PL (fourth party logistics). And also, the cost and saving evaluations of these activities are difficult to calculate as well as to allocate between partners.

4PL

Fourth Party Logistics (4PL) are also called "lead logistics providers (LLPs)." It is the integration of all companies involved along the supply chain without using their own assets. The concept of 4PL born in 1990s was created by the consulting firm Accenture. The goal of 4PL is to achieve benefits beyond the one-time operating cost reductions and asset transfers that are gained from a traditional outsourcing relationship. 4PLs manage other 3PLs and sometimes the 3PLs owned by their parent companies. Examples of 4PLs include Kuchne & Nagel, Schneider Logistics, UPS Logistics and Ryder Logistics etc.
4PL is the planning, steering and controlling of all logistic procedures, i.e. the flow of information, material and capital by one service provider with long-term strategic objectives.
Basic difference between 3PL and 4PL is that:
3PL targets the functions of the transportation while the 4PL manages the process of transportation. The true need is the process, which is what the 4PL targets but not the 3PL. 4PL answers the questions like: Is there really a process in place— or a series of standalone transactions, what is the present process, how it works, where it fails, where there are gaps, where are there redundancies. The supply chain process crosses organizational lines. It runs horizontal in a vertical organization.
According to Langley et al.'s (2005) survey, it was found that when asked if respondents understood the differences between "3PL" and "4PL" providers, over 78 per cent responded "yes" or "somewhat". When asked if the 4PL terminology is "confusing" and "ambiguous", 76 per cent responded "yes" or "somewhat". So, clearance about the idea about 4PL is necessary at first.

WHAT IS 4PL?

A 4PL provider is a supply chain integrator than manages and assembles the resources, technology and capabilities of its own organization with those of complementary service provider to deliver a comprehensive supply chain solution. Actually, 4PL can be well understood by some key concepts like the 4PL organization is a separate entity established as a joint-venture or a long term contract between a primary client and one or more partners. It acts as a single interface between the client and multiple logistics service providers. All aspects of the client's supply chain are managed by the 4PL organization. It is also possible for a major 3PL organization to form a 4PL within its existing structure. It doesn't use its own assets.

PROFITABILITY IN 4PL

In general, the 4PL concept very much focuses on working together with client on transformation efficiencies, thus redesigning not only the supply chain, but sometimes also the overall business process and internal organisation. It consults with the 3PL providers, management consultancies, IT consultancies and technology, software and e-commerce firms to provide the comprehensive supply chain solution to the customer at the other end.

Thus, by delivering the comprehensive supply chain solution to the customers, the 4PL organization delivers the value through the ability to have an impact on the entire supply chain.

Reinvention, Transformation and Execution are the 3 major phases of jobs through which the 4PL organization enhances the ability to provide the credible solution to the customer.

Reinvention leverages traditional supply chain management consulting skills, aligning business strategy with supply chain strategy, to creatively redesign and integrate the supply chain of the participants.

Transformation influences strategies through deep analysis, process redesign, organizational change management, and technology to integrate the client's supply chain activities and processes.

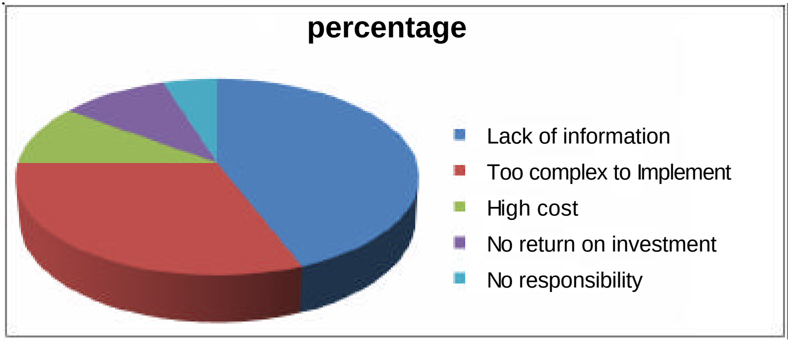
The execution exists at the tactical level. The operational responsibility for multiple supply chain functions and processes enables the 4PL organization to go beyond the traditional transportation management and warehouse operation logistics outsourcing.

The 4PL provider eradicates the problems of the supply chain like the complexity, cost control or management etc. in the following ways:

1) Reverse Logistics: - The return policy from the customers is definitely a good marketing tool but is still seen as a headache in the supply chain. The firms think of it as a cost drain and a reason behind the decrease in profitability. Rogers and Tibben-Lemke (1999) found that on an average, returns reduced the profitability of survey participants by 4.2 percent. The reasons include handling of returned goods, and also that the returned goods need to be serviced and sold off, destroyed or, if not defective, repackaged and sold through alternative sales channels. The reverse flow of the goods is a fact in the business and every firm will have to deal with this problem. For US companies, the reverse flow includes the cost exceeding $35 billion per year, according to a recent survey. The reverse flow logistics is treated as a non-revenue-generating process which can escalate the cost and may cause the decline in the customer and brand loyalty. But accepting this policy will increase the number of customers and therefore, it is no doubt a very powerful tool to gain the market share and the number of customers. However, it is a cost sensitive and the complex problem in the supply chain, but still the firms will have to come up with a dexterous solution to make it a revenue-generating policy.

According to the game theory, an e-tailer sells the product online to its customer at price 'p' and the 4PL provider offers the refurbished product in the secondary market at a cost 'w'. The 4PL's decision is related with the decision made by the e-tailer (*w* must be less than the *p*). Thus, it makes a leader-follower relationship between the e-tailer and the 4PL provider giving rise to the concept of Stackelberg type game, where the e-tailer is the leader and the 4PL organization is the follower. This system consists of three players: e-tailer, 4PL and the customer where the 4PL manages the return and careful handling of the goods. Thus, it reduces the cost and of course the revenue also increases. This resolves the complexity also by proper handling of the products. Here we can see the profit depends on the '*w-p*' relationships. And the value of the p can increase only if the value or quality of the refurbished product is better than the original product. And this can be made real only by the proper management done by the external party i.e. 4PL.[source: The role of logistics, author: Samar K. Mukhopadhyay, School of Business Administration, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, USA, Robert Setaputra, John L. Grove College of Business, Shippensburg University, Shippensburg, Pennsylvania, USA]

2) Green Logistics: - Today in the world, the environmentalism has become the core to corporate social responsibility. The carbon management is seemingly an area of interest to focus and adopt. Logistics is arguably one of the least prepared sectors to achieve improvements, according to a recent KPMG study. Since this trend is in embryonic stage in logistics sectors, so there are lots of barriers in the adoption of this trend in the logistics sector. According to ELUPEG report, lack of information, complexity in implementation, high cost, no return on investment and the dilemma between the customer demand and carbon efficiency are some of the important barriers in going green among logistics companies.



Source: ELUPEG report Fig. Barriers in going green

However, having too many barriers, ELUPEG found there are some opportunities also. Being the first mover in this trend, the company will earn a lot of benefits. Early adopter of carbon management strategy will no doubt be most beneficial.

Data availability, customer demands, legislative compulsion, distribution network optimization, collaboration and coordination, transparency and accountability, innovation, carbon offsetting, carbon footprint and leadership are some of the factors influencing any company to go for green. Carbon reduction will reduce the pollution as well as the cost also. Logistic service providers are expected to share resources, technology and methods of transport to reduce empty mileage. ELUPEG is the logistics company going for this trend. [Source: ELUPEG report 2008] For this, a perfect communication and management system is required to control and manage all the processes in the supply chain. And obviously, the fourth party logistics is the best weapon to do all this.

3) By Reducing The Distance Between The Manufacturer and The Customer: - In the traditional system, there were lots of intermediaries during the transportation system between the manufacturer and the customer. This made the level of cost, time and distance much higher which created the complexity. So, the concept of 4PL came in effect, which maintained the single interface between manufacturer and the customer and thus increased the visibility, velocity and variability in the supply chain. This conveys a closer interaction of the two sides and increases the value of the organization. The satisfactory management of the 4PL provider makes the growth of the revenue, cost reduction, working capital reduction and fixed capital reduction possible. By integrating these intermediaries, 4PL is easily able to reduce the cost and optimize the utilization of the cost to earn a lot profit. AFL Pvt. Ltd., a service provider is the company which has been benefited in this manner.

FACTORS TO BE THE 4PL

In 2006, Hoek suggested some of the factors that lead the Logistic s provider to be the 4PL. These are shown in the following chart.

Factors	LSP	4PL
Involvement in services provided in the supply chain	Physical movement and execution	Operation coordination and administration
Intensity of assets to provide services	High; vehicles, storage equipment	Low; information and communication systems
Intensity of knowledge	Low; standard tasks	High; organization of product flow
Dependency on the producer to supply the demand	Medium; low cost change and serveral service providers	High; the producer has orders to serve and depends on the supplier
Contact point at the producer's	negotiated contract	Dedicated contract and strategic coordination of the chain
Performance	Possibly limited in gains and results	More wide-ranging measures, involving client service and results in the chain
Shared information	Limited because it impacts only the execution	More wide ranging, including clients and suppliers, policies and priorities

Source: Hoek (2006)

But despite of that, there are some advantages and risks for a logistics service provider. This is shown in the following figure:

Pros	Risks
Migrating to added value service, getting away from low-profitability jobs	Failure to serve the client by focusing on strategies that concern the LSP and not necessarily agree with the client's needs
Expand the relationship with the client, increase revenue and act directly in the client's supply chain	Wearing and compromising the relationship while implementing the competencies
Keeping the client through high dependency on the information system and low reliance on own assets	Few barriers to enter the merket, with the possibility of overflowing the market and transforming the services into commodities
	Mixing different market and business models in a single organization

Source: Hoek (2006)

CONCLUSIONS

So far, we have seen the benefits of 4PL in the transport world. There are some other benefits also that will lead the profitability in the supply chain management such as the use of high technology as RFID, WMS, GUID, AUTO-ID, XML etc., transportation excellence, national footprint, optimization in the decision support tools,24/7 service capability, value added services and postponement logistics. The adoption of 4PL techniques will contribute well to the SCM system, inbound logistics as well as the outbound logistics. Definitely it is adaptive in the supply chain management. And talking about current scenario in India, a total of 55% companies are still using the 3PL service only. So, there should be more use of the 4PL so that the Indian firms would gain more. The complexity in the supply chain is easily manageable by adopting this new technology to optimize the use of the assets and to reach at the cost effective goal. So, the Indian logistic providers will gain a lot if they move towards this boon.

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