

Logistic Management

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ABSTRACT : *This particular research study is all about transportation and its role within the logistics business function. This report tries to explore the concepts of transportation, logistics, physical distribution and other concepts in detail. This report is an attempt to study and then try to further improve the working of the subject and business function logistics management in some feasible ways so that it can derive more profits and save costs as well. This report will further go on to explore related concepts such as supply chain management and channel management as well. It is very obvious that information technology and its applications have tremendously impacted overall business operations and logistics is no different. Effective and smart usage of information technology and its applications have further augmented the levels of effectiveness and efficiency of logistics within the organization and even outside the organization as well. Logistics as a business function is an important components of entire process of supply chain that is responsible for overall flow of materials within the organization and outside the organization as well. This involves various steps such as planning, implementing and controlling the flow as well as storage between points of production to ultimate selling as well. The major five parameters in this case include logistics, inbound logistics, materials management, physical distribution and supply chain management. The report is presented in chapter wise format so that reader can go stepwise and understand the concepts and recommendations in a better manner.*

I. INTRODUCTION:

Most of the sectors are willing to have an appropriate system with respect to supply chain to get high quality delivery of products and services. In the era of cutthroat competition to retain the customers a company should deliver services and goods timely at right place with appropriate cost. We will come to know after this studies that show a proper logistic management is one of the key functions for the growth of a company. Through logistic management a company can utilize value of time and place. Today plant simulation software is also available to analyze complications of production logistics but still it is changing. Goods, services and other resources can be store, forward and reverse by logistics i.e. a part of supply chain which implements and controls the efficient, effective flow. (Andreas Wieland, 2011). Now a day's information is shared among supply chain members with greater efficiency with the effective usage of technology. This enables the sending of goods or services on time with cost effective way. This research is mainly focused on logistics management system that gives the ability to take decisions related to logistics in-house or in external environment. With the help of logistics management the proper flow of goods or services can be done, so that the needs of the clients can be fulfilled. All the activities such as integration of information, transportation, inventory, warehousing, material handling, and packaging, and often security come under logistics. This research is related to the logistics and how technology is useful in accomplishing all the processes of logistics and the changing levels and developments in logistics so that timely goods are transported from one place to another in efficient manner. (Bardi, 2006).

There were many researches had done on logistics because it was started from 1950s. With the emergence of globalization and nationalization the usability of logistics is enhanced in this sector and it is growing day by day. With the great usage of logistics in the industries it becomes very easy to distribute the products at varied places and optimize the present products of the industries and this way the efficiency and effectiveness of the whole industry is got increased. This can be done with the applied management technology in the industries. The important part of nay logistics chain is its transportation process which articulates the varied activities of logistics system. The one third of the cost of logistics is spent on the transportation itself and it affects the logistics a lot. By the time of production to the distribution of goods, transportation plays an important role. If there will be good coordination among logistics activities, it will give rise to huge profits. (Bardi, 2006). The main aim of this research is to specify and redefining the interrelationship between the logistics system and the transportation. This can be done by collecting the data from various sources and analyse them in order to get the relation between these two. This research will give the general overview on logistics and transportation that will be useful for future researches. Firstly the introduction of logistics is given then

historical aspects and transport related sectors are given. Further relationship between the transportations and logistics are given in the report. It will also elaborate the importance of transportation in logistics processes. For instance the increase of the efficiency of logistics also would bestead to release traffic load in the urban areas. Furthermore, some major logistics activities and concepts were also discussed in this paper. The fuzzy logic is also explained here in full depth so that performance of supply chain management can be monitored. Finally, this paper will discuss and conclude the potential further development of logistics systems. (Andreas, 2011).

Objectives of the research:

- To study the complete structure of logistics in an organization.
- To know the role of transportation in the logistics activities.
- To know the role of logistics in the improvement of any organization.
- To determine the importance of Fuzzy logic in proper decision making in supply chain management.

II. LITERATURE REVIEW

OVERVIEW OF LOGISTICS: As per the viewpoint of Council Of Logistics Management (1991), logistics is an important component of overall process of supply chain that is put into place for planning, implementing and controlling the efficient and effective forward as well as reverse flow and storage of products, services and other information between the point of commencement and point of consumption with a purpose to meet and suffice customers' requirements. Sachan and Dutta (2005), Cousins et. al (2006), Storey et. al (2006) provided the brilliant study on the logistic management. They found the growth and development of supply chain management, its usage in to practice and what are the barriers in its implementation? They also found that the subject should be explored more because of the gap they analyzed in theory and practice of SCM. Meiza and McGaughey and Gunasekaran (2003) the scope of SCM is not only restricted to material management but they extended its scope to the TQM areas like organizational commitment, structure and other behavioral issues. Piplani and Fu (2005) offred a well coordinated framework on SCM, called as ASCEND. This framework so presented was based on coordination theory, multi agent technology and optimization technology. (Wilensky, 2009). Monitoring the performance is very necessary because it will useful in maintaining good relations and logistics can be controlled effectively and planned processes can be kept in line and that have specific goals and objectives. (Ballou, 1999).

The whole mathematical expression that is balanced by fuzzy logic principles are given here and that is useful for evaluation of performance of supply chain to calculate and minimize the delivery time and cost and maintain the quantity very well. (Lau *et al.*, 2000). The unpredicted cost and unknown fat ors are very difficult to find out so that fuzzy logic principles are used and that is beneficial for getting trust of suppliers and unknown factors can also be known. The delivery time is measured according to the days before and after the promised day of delivery. The consignment that reaches early is not acceptable because it creates the inventory in the stores and for this more people are required who have to take care about this consignment. Company economical condition also affected due to this because they have to pay early. And the consignment that reaches late, it is not beneficial for the organization. Therefore it is very necessary to reach the delivery on time.

Advantages of Fuzzy Logic: Fuzzy Logic is used to un-riddle the composite problems of supply chain and evaluate the performance of supply chain partners. The quantity of next order is decided with the help of this model and this is accomplished with the help of past records. The results given by fuzzy Logic is viable in supply chain environment.

Disadvantages: There are some drawbacks also of this model. It requires the explanation of the rules such as fuzzy rules in the starting stage of the monitoring process. It is not able to give explanation of accuracy, reliability, and compactness, and lack of the concept of justification for fact as in a rule-based system (Dhar and Stern, 1997). Thus it is clear from the literature review that researchers have studied the SCM from system perspective also and is not merely on theoretical aspect. And thus, observed the importance of the concept and its systematic interaction between the various participants of supply chain. It is quite obvious that in absence of well devised transportation framework, one cannot expect that alone logistics can garner the intended benefits out of the entire system. It is the well devised transportation system that can render a higher level of efficiency, lower operational costs significantly and foster higher level of service quality in this case as well. The various developments within this business function reflect factors such as better transport services and pressures to augment the overall logistics performance. (Baziotopoulos, 2008). Effective applications of supply chain management could foster the industry to suffice the ever rising demands of customers and business environment as well. As per the viewpoint of Ross (1998), supply chain management is a continuously evolving management

philosophy that attempts to unify the overall collective productive competencies as well as resources within the purview of business functions in case of enterprises and outside the organization's in terms of external stakeholders and business partners as well. A successful reverse logistics mechanism can augment the service level within the organizations as well as decrease the costs of overseas production level as well. Many organizations today wish to carve out a reverse logistics mechanism and implement the same as well. Third party logistics renders another option for middle level organizations to have a reverse logistics system in place. (Stopford,1997).Now-a-days we can see that there is a trend towards compact products in relation to augmenting the cost benefit ration of express delivery by decrementing the transportation cost share greatly. The increasing value of product offerings calls for rapid transportation so that organizations can decrease the interest costs bounded by stocks and other forms of inventories. (Baziotopoulos, 2008).This can be easily seen and predicted that e-commerce will rule the world in terms of prime style of business. It will render various advantages for both organizations as well as consumers in terms of-E-commerce can expand the market area from one region to various regions across the globe. This technique deploys electronic techniques in place of conventional paper work which fosters higher level of efficiency as well as competitiveness Frequency is augmented greatly. On the other hand, if average load of single time is decrease then it implies higher level of carriage through same means of transportation E-commerce has a definite high level of impact on transportation system owing to increased number of trips within the given time frame E-commerce might decrease the number of warehouses and cost of stocks as well Hence prices should be decreased. Thus, it is healthy and successful e-commerce environment is decided through optimal logistics operations. (Baziotopoulos, 2008).

III. RESEARCH METHODOLOGY

Introduction: Research is a systematic process to get the knowledge about any specific subject. (Redman and Mory) In order to find out the result of any critical situation, research is very affective in getting the answer of the research problem. But it can not be done randomly there is a particular process and steps according to that research is done.

Types of data: There are two kinds of data which is helpful in a research that is primary data and secondary data. The primary data present in too much of quantity and secondary data is related to the quality not quantity. To conduct a research both kinds of data is essential.

Research approach: There are two approaches we can follow while collecting a data. These approaches are qualitative research approach and quantitative research approach. The primary data is gathered through quantitative research method where data collection is done by surveys and questionnaires and secondary data is collected through interview, immense knowledge gathering from various sources like magazines, books, internet, pre- research papers, also For this research both quantitative and qualitative research approach is used so that data is collected through interview.

Sample: The sample size that is selected for this research study is 10 operations manager. The random sampling is generally used for this research.

Data analysis & Findings:

Introduction: The data that is collected by qualitative and quantitative research is now undergoing in the analysis phase. This is very important if the result of the research will be found. Finally on the basis of data analysis the findings from that research are given. The data collection tool was the questionnaire that contains the open as well as close ended questions.

Analysis of the data:

Q1. Why logistics is important in the organization?

To transport the goods and services from production unit to final end consumer it is required. The timely supply of goods can not be possible with the logistics department. The transportation is the very important part of logistics. With out this logistics is not complete. The main aim of any organization is to earn profits and it can be achieved through the timely supply of goods to the consumer and that can be done with the logistics only. So logistics of any organization must be very effective.

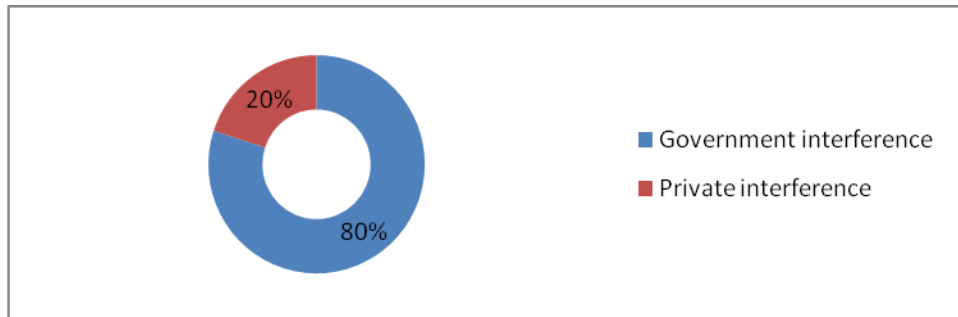
Q2. Is Fuzzy Logic is useful to measure the performance of the supply chain?

According to the study the Fuzzy logic is very useful for measuring the performance of the supply chain of any organization. It has some numerical codes on the basis of that it becomes very easy to find out the problems with the quality of the product, timely delivery of the product and it is also important to decide the quantity of the

product. In this way we can use all our suppliers in a better way whether they are over performing or underperforming. If the quality of the underperforming supplier is good than according to the fuzzy logic we can decide the comparatively lower quantity of the good that can be sent by the supplier. As far as my understanding fuzzy logic is good enough to measure the performance.

Q3. What is more important for the transportation process?

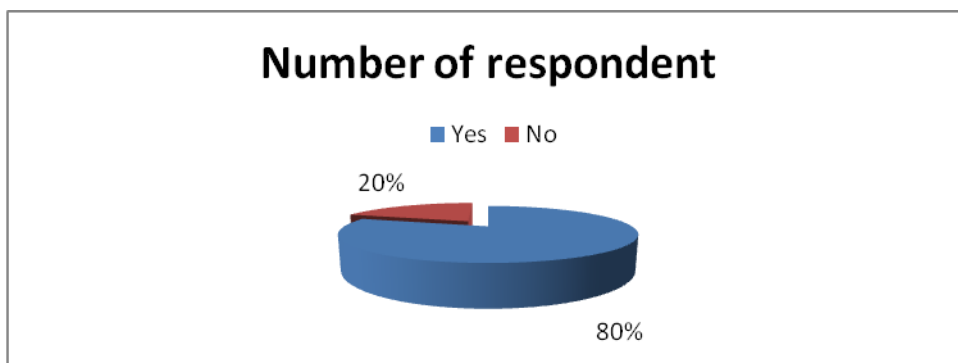
response	Number of respondent
Government interference	8
Private interference	2



Analysis of the above question: According to the responses of the respondents 80% of the people think that government interference is very necessary in case of transportation process. The rules and regulations that are decided by the government is for public welfare but if it is given mostly in the private hands it will be very problematic because some groups or individuals get benefited from this but mostly are not. So for the public interest and their betterment the government interference in very necessary for transportation.

Q4. Is transportation plays a vital role in logistics?

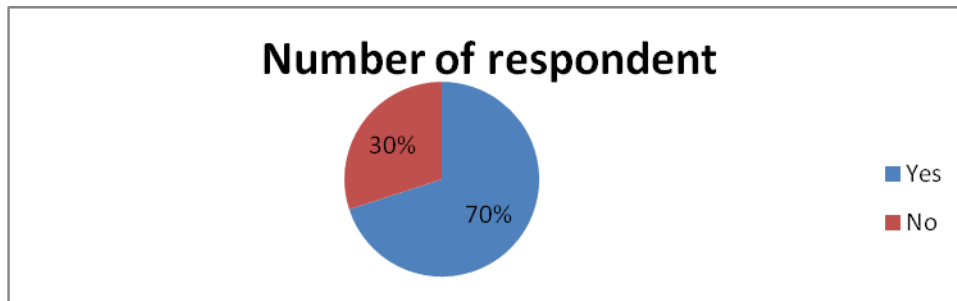
Response	Number of respondent
Yes	8
No	2



Analysis of the above question: 80% of the respondents think that transportation is utmost important part of any organizations' logistics process. With transport no material or goods can be transfer from one place to another. If raw cannot be supplied to the production unit on the given time it will create a huge problem with the organization, production units will not be able to produce the goods and if goods are produced it can only be transferred to the public through transport system.

Q5. Implementation of IT infrastructure enhances the productivity of logistics department in the organization?

Response	Number of respondent
Yes	7
No	3



Analysis of above question: Out of all the people 70% people thinks that if IT infrastructure is implemented in the organization, it will enhance the productivity of the logistics process because all the activities are in a good coordination. Now inventory will be collected at the stores. The Just in time can be easily applicable with the usage of IT. The cost and time is saved because all the communication can be done through the IT only. Companies will no more be rely on the manual processes. All the queries can be solved through internet. The supply partners can be connected with each other through the IT infrastructure so it is very beneficial for the organization and overall productivity enhancement of the company.

FUTURE PROSPECTS OF LOGISTICS : We live in a world where there is cut throat level of competition within the market place and thereby there should be drastic improvements within the logistics framework of private as well as public organizations. As per the viewpoint of Weeld and Roszemeijer there are three revolutions that have taken place which include globalization of trade, advent of information era and highly demanding consumers and continuously evolving and altering preferences of consumers. The various characteristics of the process of logistics development include-Role of Government- in order to maintain the competitiveness of various industries, government has to pave the way for assisting numerous logistics industries.

This will augment the level of efficiency within the market and to decrease operational costs. This is undertaken to foster logistics efficiency and decrease operational costs. But this involves higher level of costs and there are some hurdles in relation to laws and national policy framework as well. In this case, all this can be accomplished through the support of government to accomplish the plan. Growth of International Goods Transport- in this case, the rising trend towards international freight transport is supported through numerous factors. First, the rise of e-commerce fuels variety of international business activities. Secondly, alterations within the production strategy call out for internal cooperation at all the levels. Thirdly, pressures within the globalized markets push local industries foster themselves to operate at international standards and fight the competition in a better manner. Improvement within Services- it is essential to render excellent level of customer service so that businesses operations can operate successfully even in this competitive world. Service quality is the prime factor which has a bearing on consumer behaviour among those organizations whose offerings have a higher degree of similarity. In present times, service frameworks comprise of novel techniques such as Efficient Consumer Response (ECR) and Quick Response (QR). In coming future, various new techniques can be applied in rendering high level of services to valuable consumers.

Shorter Product Life Cycle- in relation to the present market trend, the design of merchandise is altering at a dynamic pace and hence, product life cycles are getting shorter. Channel cooperation between organizations- With a specific purpose to save the costs in relation to logistics, the main concept is to maximize the utility of present capacity in relation to transport. It is essential to integrate the demands of logistics between various departments to accomplish the organizational objectives. In general, there should be amalgamation of concepts so that organization can have its own logistics service for the better utilization of resources and output. Specialized Logistics Delivery- the key trend in this case in relation to logistics industries is specialized delivery service. To meet the increasing levels of demand, delivery mechanism has to become highly robust.

Freight Transport- the alliance between various delivery organizations is an important trend in the future. The strategy can be deployed for expanding service areas and augment the level of service quality and decrease the overall costs associated with delivery.

The need for logistics infrastructure development : We can all witness that e-commerce applications are growing exponentially so that it can manage fast response deliveries as well. Increasingly, business operations attempt to sustain sophisticated short life cycles and sustain manufacturing processes so that customer demands can be sufficed in the desired manner. In this case, internationalization of various transport activities call for coordinated government activities so that higher level of efficiency can be accomplished within the organizational set up. The trends are changing rapidly and this has to be matched with supply chain functions as well as demands. These alterations necessitate higher degree of flexibility and thereby costs need to be reflected in infrastructural costs as well.

The need for new financing and operating schemes : In this case the process of transportation has been institutionalized with the help and guidance from public sector and not private sector. Hence, government involvement is high in this case. But then if the country has to become highly developed then it not only needs participation of public organizations but also private organizations. The prime objective in this case revolves round the parameter of logistics infrastructure as it is related with business and its commercial activities to a great extent. The prime reasons that have paved the way for implantation of logistics infrastructure include- First, expenditure of government on transport infrastructure especially in case of roads has come under deep assessment from other sectors within the economy. As a result, various public funds often become insufficient to suffice rising demands of new logistics set up. In some cases the funding from public alone is not sufficient for such a development in the field of logistics as there is lack of coordination among resources as well as financial risks.

IV. CONCLUSION

Thus, this particular research paper was an attempt to cover all the activities within logistics set up in relation to transportation business function. This research paper was an attempt to explore and uncover detain important concepts in relation to the research paper in consideration. The prime components of this research study included review of logistics development, characters of various transport operations in relation to logistics activities, city logistics and its cooperation and relation with other activities in consideration. Thus we can easily make out the fact that transportation and logistics are highly related with each other in variety of manners. Logistics framework has an important and prime position within our societies and its stipulated activities as well. Both are highly dependent on each other and thereby it is the subject and framework of logistics management that calls out for transportation to discharge important activities and all this helps in the process of fostering traffic environment and development of transportation as well. Thus it can be easily said that it is the business function of transportation that has to play a very important and critical part in this purview and all the related activities and tasks in consideration as well. Without the aid and presence of transportation, logistics set up and strategies cannot operate at a full-fledged level in the present corporate world and market place.

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