

**Logistics & Supply Chain Management**  
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**Lecture 20 : Logistics vs SCM**

So, hello dear friends welcome back to NPTEL online course on logistics and supply chain management. So, till now we discussed about logistics part as major focus right and so now we will start our discussion on supply chain management. So, before going to supply chain management let us try to you know explore where are the boundaries lying when we are saying that logistics is different functional area and supply chain management is different functional area. We will also see how logistics as one functional area of supply chain management is working right. So, in this session we will try to relate somewhere the logistics with supply chain management and differentiation as well. So, we will see what is supply chain management, what is the role of logistics in that and how are supply chain management and logistics are the same or different and then if difference where are the key different points.

We will try to find out those and what are the logistical components in the supply chain and we will finish this session on very small case study. related to logistics and supply chain management. So, this is logistics or supply chain management many times people are using academicians researchers they are using interchangeably right. So, old theory says that first the logistics concept came into picture and then over the time we matured the logistics component and then we converted into supply chain management where we were thinking the whole chain as one functional area and under that the logistics function is somewhere working right.

so with that concept many are still thinking that logistics and supply chain management is still the same right so you can see supply chain management in united states is more commonly known as logistics management right in europe if we talk about so When the small survey was conducted and the same concept was asked from many experts working in the domain. So, as per wayne and Johnson, he said there is no difference today. So, what we were doing as logistics management earlier, today we are doing as supply chain management. so another study says that supply chain management incorporates the field of logistics right and logistics is a number of sub processes within supply chain management so in complete supply chain management there are so many small small logistics management practices so let's talk about if transportation from supplier to

manufacturing is happening that is one functional area under transportation and same transportation related to outbound logistics from the manufacturer to the customer then again another sub process of under same area that is transportation so there is another statement a supply chain management company is generally a third party operator managing the overall movement of the product whether inbound or outbound right so inbound outbound means if these are the raw material suppliers so from where the raw material is following to the manufacturer and from manufacturer the finished good is going to customer. This is the simple supply chain structure we discussed many times.

Now, for this manufacturer inbound logistics is this one and outbound logistics is this one. from the manufacturer to the customer. So, this logistics part is taking care if transportation is happening here from the raw material supplier to manufacturer or storage is happening here in between raw material supplier and manufacturer then this is counted as inbound logistics. even if packaging of that raw material is happening here. So, that is also coming under inbound logistics.

Same functions if we are doing somewhere down the supply chain distribution network we will call those functions at outbound logistics component. So, very simple to understand. So, there are some again view point different view point traditional they say that logistics is broader picture. and in under that supply chain management is small picture but that is you know very old school of thought when we were first we identified that logistics yes is a separate functional unit requires special attention somewhere in 1980s we realize that this is something cannot be ignored just to ensure the continuous supply of the raw material or the finished goods or transportation of the product from one end to other end in that simple line we can understand so in that way logistics is very very important and should be given special focus if we are not competent enough to improve our logistics performance let us outsource to some of the stakeholders who are perfect in that right so same way in under that then supply chain management concept started we if we are doing something with the product renovation then is part of under logistics we are maybe in one functional unit as a raw material supplier or sub assembly manufacturer or co-manufacturer or manufacturer so that is part of logistics within your manufacturing facility if you are handling the material that is also coming under logistics material handling right so that was the old view but then it was termed as there is no such separate term we should replace completely logistics with the supply chain management which is we are doing right now it's a complete set of activities so there is no such different concept of logistics logistics being sub part of supply chain management where most of the people who are working in this area they are thinking that this is a small part of supply chain management and obviously under logistics if you see there are people who are saying that logistics is separate supply chain management is separate functional unit

but yes there are some common points on which they are working like common point may be the performance productivity efficiency of delivering your finished goods from the source to the customer This is the common basic objective if we will find out the intersectional area between logistics and supply chain. But if I am talking about only logistics, this is physical transportation of the product from one point to other point.

Warehousing of the product, storage of the product, sometime we are saying the information we are transferring information in the channel that is also part of logistics. If you are doing some value adding activities in the warehousing like packaging, like kitting, all those services, labeling, so then it is part of your logistics management. right but if we talk about supply chain management this all part is coming obviously under supply chain management if we are considering logistics as part of supply chain management but what are the different activities here let's say r & d research and development if you are coming up with the new products from where you will get the information that you are now going for the next product from your information channel you are getting the information through your logistics network right and then you are feeling this realizing the need of coming up with new features in your product in your services because your competitors are doing those things or may be there are expectation from the customer then we are talking about the manufacturing then it is a part of supply chain. We are not considering here the manufacturing. If we are considering manufacturing, basically we are dealing with some of the basic questions.

What is to be manufactured? How much is to be manufactured? Where is to be manufactured? and when we are going to manufacture these are some of the basic questions under manufacturing will deal with right if we are fixed with this product or industry we are going with we will find out the suppliers will develop the relationships all those stakeholders will try to find out right how much depending upon the how much order we are going to we are anticipating from the market again with the help of your the arm of logistics right and then when and where right So, if you are having multiple models of the same product, how much model A is required, B is required, C is required that you will find out depending upon your forecasting model. So, this is how we can see there are some functional units we are discussing specially in supply chain management. and obviously the return supply chains are also part of these two now if we are focusing on that part right returns coming from the market so you can see here what are the different functional areas related to logistics and supply chain management so over the time now many people are realizing that this definition the boundaries are blurred now there is no such you can say difference between your logistics and supply chain management but yes if you talk about supply chain management like I told you product innovation and development is one part purchasing and sourcing so we were talking about the shifting of raw material from the suppliers to the manufacturer but how you

will decide that this much quantity we are going to purchase from vendor A, B, C so that allocation of order will come under supply chain management and how you will decide that this much order 60% order will go to your vendor A right so obviously you must be doing some vendor rating with respect to that vendor and depending upon the may be the quality of the raw material he is providing the pricing he is giving you may be the delivery schedules he is giving you are you are so comfortable with all those parameters right so then you decided to go with vendor A with the highest order sourcing so what are the part you are going to outsource so that is also coming under your supply chain management then obviously manufacturing and operations where the assemblies are happening you are sourcing different sub assemblies different raw material components and then on that production line you are assembling all the parts and in the end packaging is being done and then we need the logistics and distribution services again. So, it is not that here only logistics is required in the raw material supply also logistics services are required and then customer service. if you are delivering a door step if installation of that product is required if demonstration of that product is required or may be under warranty guarantee if any replacements are coming back so those also you will take care and then global deployment we talked about the international market so if you are working globally your products either you are sending the outbound logistics to global market or you are ensuring your inbound logistics from the global market both way then you have to go for global deployment of your supply chain management.

Then, we can again say that this by Michigan State University supply chain logistics involves collaboration between firms, suppliers, customers and other partners as a means of boosting efficiency and providing the value to the customer. So, this whole set of activities the only purpose is we should deliver the quality products with the maximum value possible and with the highest efficiency. So, that we can minimize the cost of operation delivering the product manufacturing the product and if we can do so we will be more competent with respect to our competitors because then we will be having extra margin maybe that margin we can share with the customers as some offers or maybe we can keep that margin with us for further expansion right So, all stakeholders are part of that because in supply chain management this is kind of system concept system view concept where we are saying that if from the raw material to the end customer how you are reaching with your product right if there is a profit of maybe 10 dollars right. So, this 10 dollar will be shared with the suppliers as well manufacturer as well wholesaler retailer distributor. with all the stakeholder this profit of 10 dollar will be shared right.

So, this is a system view of supply chain management if loss will be shared through all the supply chain. So, I cannot say as a manufacturer that I am cost efficient. I am claiming in the market that I am cost efficient with minimum if I am talking about

maybe Goibibo or maybe your ixigo. So, they are claiming that cheapest flight you will get or hotels you will get. So, if I am saying that I have to ensure through all the stakeholders that you should get the cheapest rate on the Go Ibibo or Make My Trip or ixigo.

right so then in that case the hotel services providers they should also somewhere compromise with that if you are saying that you are not cost efficient you are very responsive right kind of player if you will ask for gym in the hotel will provide you if you ask for swimming pool in the hotel will provide you if you ask for dining in the room will provide all the services whatever extra services you need if you want those services we are going to provide you as this is the promise coming right or if you are canceling your hotel in the last hour as well so even then the refund will be done but then this promise as make my trip or goibibo if you are making that is only possible if your suppliers are ready to do that if the hotel the property owner person he is also ready for that. So, then that means, the complete integration of all the stakeholders required. So, we have seen what is logistics and we defined that this is the physical flow of products and services one point to other point may be from the point of origin to the point of consumption or may be from the consumption to origin back if we are talking about the reverse supply chain and related information also sometimes because this information is required to manage the inventory to figure out the demand. So, that demand can be met with the supply. right so this is under logistics we talked about majorly we talked about three functional area one is transportation another one is warehousing packaging and one more thing is distribution final distribution right so these are some of the parts we discussed under logistics now Logistics includes demand planning, inventory management, transportation, fleet management, material handling and customer order fulfillment.

So, let us understand this in two different concepts. One is inbound logistics, other one is outbound logistics. Already I talked about whatever as a manufacturer if I am sitting here, whatever it takes to deliver the product to the end customer, it is outbound logistics. and to shift that raw material from the raw material suppliers it is known as inbound logistics. So, the only thing is when we are talking about inbound logistics, we are talking about the transportation of the raw material, we are talking about storage of the raw material and we are talking about final distribution of that raw material to the production lines and production lines are not only at one place, may be we have five different manufacturing facilities in India, so that those five different manufacturing facilities will be fed using all those suppliers and in the same manufacturing facility if we have multiple production lines so that raw material same component may be will be fed to all the production lines if the same material is required or same dimensions are required if is there any change with the dimension so as per that as per the requirement of the design of that product so we will supply the inbound logistics so this is the concept outbound logistics all these

functional three different functional areas transportation distribution storage in between so that is outbound logistics here when very beautiful concept I will try to highlight here let us say I am the manufacturer or the supplier of the product right and I am following two different structure, one is the customer is sitting here and raw material supplier is here.

This is let us say 10 kilometer distance, this is 5 kilometer distance. The other part is same manufacturer here, this is 5 kilometer now and this one is 10 kilometer to the customer. now if i'll ask you which one is more efficient so you can see here is inbound logistics distance is higher than outbound logistics distance in this case inbound logistics distance is lesser than outbound logistics distance now you might have seen if we are ordering through amazon or flipkart or anything specially talking about heavy item let's say furniture so what they are doing they are preparing the whole furniture and then dismantling that furniture and again at the location either they are arranging again the assembly of that furniture or maybe they are giving easy instructions so that at your end you can easily install. Now, if you are following this kind of structure where outbound logistics is travelling less distance to compare to your inbound logistics this is more cost efficient which you can understand because if I am may be transporting 10 cars through this container may be one container taking 8 or 10 cars. But, in this case if I will talk about 10 containers they can carry may be more than 200 cars raw material because that is dismantled.

So, that means once it is dismantled not the final product with the packaging it will take less space. So, in lesser capacity I can transport maximum material so we try to follow this kind of network where the outbound logistics distance is lesser because that will give you cost efficient network because outbound logistics require more space so this is costly right so we try to set up our manufacturing factories near to the customer location or market so that in the end the final product will reach with the minimum distance should travel minimum distance right. So, what are the objectives we talked about right time, right place, right quality, right price and right product and right customer right. So, these are the objectives. So, when we are delivering the final product and then you can say in the end we need to maintain the supply demand equilibrium with our logistics activities.

However, supply chain and logistics are the same. Already I talked about in the intersectional part, both are focusing on goods, services, and information, how it is flowing through the network. The ultimate aim is which obviously the company success will be related only when our customers are more satisfied there is positive correlation obviously customers are loyal customers are more satisfied will be more loyal customers and then in the end your success of the company in that way will be higher and the obviously the purpose here is the efficient and effective delivery of the product through

our logistics distribution network. And same is the objective of your supply chain management as well. So, let us talk about some of the key differences between logistics and supply chain management.

So, this complete is a model which is giving you you know if you will take care of all the sub activities in that model will drive the competitive advantage and it is relatively new term which has again coming from the logistics only right. So, and will provide you the competitive advantage and if you will talk about what are the different activities production, inventory, labor planning, material, facility management, manufacturing, delivery of goods and services right. so in logistics we were not talking about how you are converting the raw material into finished one that is part of this facility management where you need to locate the facilities where are you you are going to locate your manufacturing facility your warehouses these are kind of decision we will discuss in supply chain management which are very very important part how you should design your logistics outbound logistics inbound logistics just one example i highlighted in the last slide right so that is very much part of your supply chain we never talked about the labor planning how we will do that this is part of this right materials how designing of the product product design is the first step will give you the idea how you will work with the supply chain then not only product design what is going to be the process design So, that will also give you idea what are the components required and if once components are finalized what type of manufacturing assemblies are required, production lines, how you will design your show flow that all part is under supply chain management. And we in logistics we have focused only on the physical distribution, transportation right we talked about. So, that is a little old concept.

Again, supply chain management controls the development of raw material into finished one and then finally, that finished goods are how those goods are transferred to the final end customer and if any returns are there how we can do that as well. So, Keith oliver is one logistician. who also coined the term of supply chain management so in his findings he has explained how this logistic concept is matured now and we need to add some more functional area into that so then we can just go through cost and efficient deliveries and this obviously we talked about when we talked about the history of logistics we talked about how it has come from the military operations where after world war second we realized that So, in a better way if we will take care of our logistics functions, so we will be more productive and on time. why logistics are important to supply chain in supply chain what differently we are talking about we are talking about coming up with new products from where you will get the idea of coming up with new product obviously your logistic partner will give you information that distribution network right and then you need to be you need to deliver right products at the right time How you can do that?

Through your logistic network only when you are ensuring the smooth supply of the raw material and then you can ensure the final delivery on time. Reducing cost and improving efficiency, this will happen only when you are implementing lean logistics where you are removing all the non-value adding activities.

And if you are minimizing those, you can increase the customer loyalty because you will be most of the time on time. Unique value proposition, how you are coming with the new ideas and how? how you are providing a means to deliver goods in a cost effective locations right and in production also if we are talking about we should set up our facilities where we are more you know cost effective what are the logistics components of the supply chain so information is one thing which i talked about we are collecting through your logistics distribution network what is the status of the items whether it is shipped it is in the warehouse what is the inventory status. So, that all will record here. So, then storage is part of your logistics which is very important for supply chain to ensure the smooth supply chain operations. If you are maintaining that storage only then you can say that you are never stock out and you are maintaining that minimum level to meet the requirement.

So, warehousing is again So, you can add some key value adding activities in warehousing other than picking, packing and handling the product you can sometimes if you are receiving the returns also how you can ensure the resale of the same product. So, and then again kitting and leveling kind of value adding activities you can do in the warehousing. Material handling usually we use this term to handle the material within one facility if manufacturing facility is here we are converting raw material into finished one so how we are moving the material from store department to production department then production department is moving the material on the production line finally it is shipped to the outgoing quality control they are checking and then it is moved to dispatch area from where may be the loading will be done so this is in in that manufacturing unit this is how handling is been done. Packaging again you need to ensure the minimum space should be utilized and cost you can minimize in that way, but you need not to damage in that way. If you are minimizing the packaging, but that should not go in that way that you are damaging the final product.

How efficiently you are utilizing the transportation routes, the vehicles, the warehousing capacity, the distribution and mile delivery, how you can be in that way efficient and utilizing the resources fully. Inventory control. when we we have planned our demand with respect to the supply right so then we can control the inventory whether you are talking about raw material inventory finished one or semi finished one so transportation is again part of your supply chain management which will ensure the final product



movement or maybe the raw material movement as well and then you have as transportation manager you have to take the decision related to your intermodal transportation network because then that cost component will come into picture so role of logistics within supply chain supply chain if we are talking about planning how logistics will play role we need to plan information that information will be provided by that logistics network and then inventory controlling how will maintain how much inventory will maintain if you are talking about sourcing then information material handling and transportation are the major part against the sourcing in manufacturing within manufacturing also you are storing you are handling the material you are shipping the material from one stage to other stage warehousing utilization right packaging transportation those all things you are doing under logistics delivering again this information is required warehousing inventory packaging transportation all these things are required which are part of your logistics for delivering the product and returning again all those function whatever you are doing as part of logistics to ship the product from the raw material supplier to end customer so same you will be doing for maybe getting the after the end of use of that product or maybe after that damaging that product or maybe recycling or you are going for refurbishment of that product then logistics component will come into picture. So, this is one small case study of GeoDis. So, that is a logistics service provider and they addressed some of the challenges where small online retailers they were facing right and when we are talking about small online retailers so first thing is they are not sure about the demand right sometime it is coming sometime it is not coming so then setting up complete different channel separately is a big question for those small players and then seasonal fluctuations you need to maybe sometime increase the volume sometime you need to you know reduce the supply So, how as one player you can you know survive during those challenges.

So, this geodis will help you to survive those things and will help you to maintain the accurate inventory levels and will ensure that you will be not stock out and also you are not in keeping the excess inventories right and will ensure that that next day delivery or two day delivery can happen. So, they are providing the fast and reliable fulfillment and there if you talk about their fulfillment accuracy I think that is somewhere 91 percent you can see. So, many small players are you know collaborating with them they are helping them to demand forecast planning and in that way when you are having the exact information and and they are providing those multiple solutions and if you are having exact information related to forecasting so you can obviously plan your inventory when you need to scale up when you need to scale down your warehouse as per that only you can manage but because this is the player who is having multiple clients so they can easily maintain if today you are reducing your order may be from some other player they can utilize the unutilized capacity so finally through optimized shipping practices they will also give you that solution during your transportation they will pick those routes they

will design the capacity of the container as per your design of the packaging final packaging of the product so that it should take the minimum cost and also the delivery times those delivery times can be ensured which you are always promising with your customers then this small outsourced facility and transport into now into multi country network we are throughout you know world many small players are attached with them and because the 91 percent fulfillment rate so with the european customer so you can say that how reliable and cost efficient it is with this. So, these kind of players are also there now who can handle if you are very small retail shop how you can attach with those big players and same is the case of if you are having one taxi only one car and you want to operate as taxi as that you want to use as taxi. so if you will individually operate in the market so obviously those many orders may not come rides may not come right so in that way if you are connecting yourself with the ola or uber so then the utilization rate will be higher right so same is the case with this also so here we can conclude that logistics is very much part of supply chain management and your smooth supply chain operation can be ensured only when the three basic functions under logistics are doing perfectly fine first is the transportation is happening on time second thing is the storage whenever it is required you are maintaining that safety stock so that you are not you are never saying your customer know that we are out of stock right and finally the distribution of the product how it is happening to the end customer with that how you are improving the experience of the customer right but yes because with now is the era where so many different solutions we are talking about so many different platforms we are talking about different softwares for managing your distribution to manage your sourcing to manage your manufacturing to manage your inventory to manage your warehousing transportation different softwares are there right but then we need to integrate all those into one platform how beautifully we can do that so that the overall customer experience can be enhanced and we can deliver the product or services in more cost effective and efficient way.

So, that is all when we can talk about this logistics and supply chain management. So, these are some references and books. So, Simchi Levy is one very good you can refer for further readings and then the way and chain fundamental of supply chain management. Sunil Chopra and Peter Mendel is again on supply chain management strategy, planning and operations. So, these are some of the references you can go through. So, thank you very much.