

Logistics & Supply Chain Management
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Lecture 06 : E-Logistics

so hello dear friends welcome to NPTEL online course on logistics and supply chain management today we'll discuss about e-logistics so what are the different players in e-commerce industry we'll introduce what the structure is in e-logistics when we are talking about what are the different challenges what are the different key elements and then we'll talk about the latest emergence which is coming out as same day delivery and it's not only the opportunity but as coming as big challenge when we are talking about logistics industry. So just before going further, I just want to clarify here when we are talking about especially we are talking about e-logistics. So how it is different when we are talking about a very traditional type of stores retail stores right so you might have seen when we are going for e-logistics the level of services which are required the expectations from the customer this is from the customers what expectations are coming from the customer so services level required are at very high level maybe in terms of doorstep delivery maybe in terms of your different payment options maybe in terms of returns coming from the e-commerce and then maybe the variety required by the customer right and then maybe the quality level these are some of the expectations coming from the customers right when if you talk about compare this with the traditional stores if you talk only about this return part you just imagine how many returns are coming back in case of traditional brick and mortar store. right how many how many in in your household also you can observe this how many times we are returning those items which we purchased from the local market or shop do we have that provision if yes you are known face to that shopkeeper then maybe sometimes if major fault is there then you can go for that right but then how many times you are doing that but similarly if you compare this with the online e-commerce platform then the percentage is really very high where almost 30 to 35 percent products are returned back and because of so many different issues we will discuss about the issues as well right services level so doorstep delivery even it's not only doorstep delivery what time you want it that also you can mention if today you are available maybe 6 to 7 pm so your delivery should be done within that time so this is just I want to clarify why special attention is required when we are talking about e-commerce industry when we are talking about traditional store maybe it is covering one particular city area maybe one town or maybe one small village where the population is very well known when population is known so what is going to be the demand is also you are well aware out of that so for meeting those demands you can have all the inventory and then you can plan your store accordingly so kind of traditional brick

and mortar store the challenges are not very high in terms of maintaining inventory, variety, quality, services level where you are sitting at one place and selling whatever products you are having right and customers are visiting your stores and so in that way it is more stabilized kind of industry and so yes challenges are there to meet the regular demand or maybe if there are some fluctuations in the demand because of so many reasons in so many different you know occasions so but still in that particular reason we are still quite aware about that so challenges in terms of that somewhere we are mitigating those risks and all that but in e-logistics because this platform every day it is evolving right so you cannot imagine maybe next five years down the line or maybe a decade down the line what could be the the delivery speed right and what expectations are coming from the customer so that's why in this session particularly I just will highlight about the e-commerce industry worldwide Indian scenario what are those challenges right so just will define e-logistics means all the physical flows of an organization that sells goods on through an online platform that plat online platform maybe you are selling your hotel room by using your own website you can sell it through make my trip you can sell it by maybe goabibo you can sell it by by any other platform right so this is a kind of e-marketplace where your goods or services are available on the digital platform so also known as electronic logistics or digital logistics it refers to the use of digital technologies and electronic system to manage and optimize various activities so this is e-logistics right so when you are talking about e-logistics there are some major challenges like operations logistics operation how will make the delivery doorstep delivery or customer pickup locations whatever model you will pick and then visibility throughout the supply chain that is also very important part I want to all the time analyze where my inventory is how much inventory is left out in the store at retail store distribution center or maybe order fulfillment center right so that also I want to and as a customer if I am placing order so obviously I am interested in tracking whether it has been dispatched whether the invoice has been generated then it has been dispatched whether it has reached the nearest hub near to my location and then finally when it is out for delivery so I want to make myself available during that time whatever slot I have picked so that that delivery can happen or maybe the urgency of the material as well and then in the end efficiency we also need to ensure during this right. so then again very important point is the withdrawal period is also much longer in e-commerce whereas in traditional store if today morning you bought the product you are supposed to return within the same day right but in e-commerce platform you might have seen earlier the meesho or ebay or myantra especially so they were giving you on apparels so they were giving you around 20 22 days or somewhere 26 days time to return back you can easily you can try that and then you can if you feel comfortable you are liking that product then you can use that otherwise you can return it but because of this percentage is increasing and they face some challenges customers try to you know use that products and then after 20 22 days they they were you know sending those products back so this is a kind of loss

for the organization so then they reduce this time period as well and they have changed some you know packaging also so where they have put some permanent kind of tags if you will remove those tags so product even if you are returning after one day without tag so that will not be returned so this is again if you see 35% of customers who have had a negative delivery experience will no longer order on the same e-commerce website right so this is challenge this is related to delivery only now let's say if something fraud happens if your money is deducted from the bank and then your e-commerce player is saying that we did not receive the you know money and so we cannot process the order so anyhow you you will get that money it will meet may take four or five working days but still you you are having that negative experience with the transaction so then you you will not feel safe right so already people have that mindset that you should not share your banking details and all you know password or CVV number whatever you are using for the transactions right so even if I'm doing that and my may be very first experience is like that money is deducted but I'm not getting the acknowledgement so then it is big challenge So just how the experience is, this is one short ad by DHL through your e-commerce website, how you can place the order, how you can enjoy that order. So here I have included some video links.

You guys can just quickly go through these videos and then we'll continue our discussion on the topic. So you can just see how this DHL is doing the international delivery so swiftly and so smoothly. So you just imagine the product and it will be with you. So backend, whatever is required, they are completing all those things, collecting the product, packaging the product.

sorting the product and then maybe pin code wise you are sorting it cross docking you are doing in between so right so all those things whatever we discussed in logistics management so all those concept we will be using so we'll just go through this e-logistics market if you talk about the international market you can see these taobao or t-mall and amazon they are carrying almost more than 40 percent share if we we are talking about the global marketplace right e-place So if you talk about Tmall and Taobao, this is coming from the same group that is Alibaba, that is from China. you are not surprised because this is 30% they are taking globally and you will be surprised to know that they are contributing towards maybe 5 to 6% to Chinese GDP so this is so big player you can just imagine how they are you know now internationally they are evolving the very next session will be on international logistics right so these two are very connected right so if you talk about specifically tmall they are into branded products right they are selling all the branded products right nike adidas so zara so these are some of the major players they are selling the products right taobao is basically this is b2c usually business to you know a customer and this they are this taobao is for small retailers or entrepreneurs right

so they are some sometimes they are this model is known as c2c customer to customer right so they are actually selling the local products right local brands which are only famous in chinese market but still it is carrying 15 share and then amazon is another big player from us you know that and The other players are JD.com, eBay and Walmart is also obviously big competitor of Amazon. The fight is starting from US itself. This is the international scenario.

Talking about Indian market, we know these two are major players. Flipkart and Amazon. So Flipkart, if I talk about the electronics appliances and mobile phones, they are carrying somewhere around 60% share. This is the overall share. And because now this is, earlier this was reducing maybe two, three years back because of the strong entry of Amazon.

but now because flipkart is backed up by walmart and they are claiming around 80 percent stake through equity they have already invested in flipkart right so they have taken over that so you can see around 63 percent of indian market is just taken by these two big players amazon and flipkart so this is the international scenario right and indian e-commerce market So let's talk about the different industries and how they are penetrating as per as e-commerce industry is concerned and the first bars very high and belongs to this color belongs to China and you can see they are leading always in everywhere if you talk about mobile electronics, fashion or general merchandise, home delivery or grocery items as well. but if you talk about Indian market grocery home delivery we are means taking only that less than 1% share US is also in between so because China after China India may be the next potential market so because of obviously potential market because of the population size we have so when we are claiming that much population obviously that is something unexplored population so how we can increase the experience of this unexplored population so that the this market size of from 1 percent or 5 percent or 10 percent 10 percent 30 percent we can increase right this trend is increasing already right but because e-commerce is something in India it started little late right so I think if you talk about Flipkart is the very I think not the first player but first biggest player right if you talk about in India so they started somewhere in 2007 or 8 And then Amazon entered, this is Flipkart, right? Then Amazon entered somewhere around 2013, right? So in that way, it is not that old. So still it is growing, right? So there is huge market potential. We need to tap that. so if you talk about different industry share in indian e-commerce market forty percent is electronics followed by another forty percent is apparel industry then grocery and food jewelry and furniture obviously when we go down the line so those items are there which actually we want to you know see physically we want to touch physically we want to feel those items so there the penetration is not that much high because we want and when we are buying maybe

apparel or maybe consumer electronics so already you know if you want to buy a mobile phone and that fixed model is there if you want to buy maybe let's say iPhone 14 or 15 so already it is specifications are well known to you only thing you need complete product as long as you are getting the complete product from where you are getting it hardly matters you right the reason is why hardly matters to you because the promise of the quality is coming from directly from the apple right so they are the authorized distributor so whosoever is selling that you will get that quality right but the thing is still Indian as that e-commerce industry still it is growing and the faith is still we need to develop in the customers mind so this is very interesting if you talk about the festive season so growth in merchandise value if you talk about flipkart is carrying 62 percent share thanks to big billion days the big billion days they are coming with the offers and there you are sometimes getting even 80 to 90 percent offers on specially on home appliances or maybe these mobile items right electronics items you can say and so that hike in the market is quite obvious even if you talk about order quantity the number of units sold so even then this flipkart is leading with 49 percent share after that meesho 21 percent share so these are some of the figures your mobile sales will increase by seven times electronics and appliances will increase by five times and then fashion by two three times now this is okay that we are able to generate that much sales or we are able to push the product into the market but what are the challenges which are coming through this you know push strategy the heavy promotional strategy the thing is first thing is we are not sure about the demand right so you might have seen during this time usually we are stock out so if you will order your any product mobile through your flip kart during big billion days or any from amazon during those you know prime days they are having that concept of amazon prime time or they sell the products with the heavy discounts right so there usually they are stock out right and then you are waiting for maybe 5 days it is this seasonal offer is going on so you are waiting for that stock out is one problem with the inventory because that demand is sudden rise in the demand and you are not sure that how much rise there will be if it is if you talk about on this parameter Walmart is doing fairly well in the market because they have this very unique strategy is of everyday low pricing everyday low pricing means you come in the morning in the evening day time whenever you will come you place order through our website any time of the day right any week any month so you will get the same price as a customer i will feel little safe because i am getting the stabilized price right and in return what walmart is getting is that they can channelize very smoothly their inventory because the demand pattern is fixed to them almost 90 to 95 percent is fixed small variation is there so that's why we are managing that much safety stock but if you are talking about these kind of seasonal offers of big billion days then you see the stock out rate is very high in case of flipkart and if they are promising during those days maybe your mobile will be delivered within 10 days it may take somewhere between 15 or 20 days even more than that right so you might have also experienced these things so because of these seasonal or festival sales this is happening

this is big challenge for logistics industry right if you talk about fashion e-commerce market in India so again that is dominated by Flipkart 27% followed by Myntra and then Amazon and Mesho standing at 15-15% right so here I just want to highlight the rise in Myntra and they are continuously investing into marketing strategies one strategy which I personally liked about Myntra is their sustainable packaging so you might have seen they are now using paper packaging and they are writing it in very bold letters on the packaging itself that it is 100% recyclable.

so when it is 100 percent so there are now i i initially talked about the customer viewpoint now they are getting you know more aware about these kind of initiatives where we need to you know whatever products we are using or services we are using we are just evaluating what is the carbon footprint right and then we are also evaluating the stakeholders of players who are providing those product and services whether they are talking about the sustainability parameters whether they are trying to implement those things into their product and services right so in that way we are evaluating so I'm pretty sure that this 100% this paper packaging will help to you know push the sales further as far as Myntra is concerned so e-logistics what are the various solutions to the customers offer several delivery methods right and home delivery is one which we are very frequently talking about pickup point is another one maybe for the office people when we are no one is at home we are not sure at that time where we will be so then we are fixing one location maybe near to our office or maybe near to our home and then picking that particular slot and then we are saying okay we are okay with picking the product from your pickup location and this is very very popular when we talk about France right and anything D plus days whatever you promise that within three days you will get and you are taking one extra day that is something unbearable right so I would like to avoid that but this is consistently this is happening with flipkart during the festival seasons and amazon as well right so deliveries are delayed and i told you the major reason so but still they are coming with those promotional office offers because now customers are now evident to that they are waiting eagerly if if they want to buy something they are waiting okay in maybe we'll wait for another one or two months and then big billion days will be there and we'll buy maybe on the reduced price right so although now because it is a kind of repetitive activity so they can you know forecast in a better way but still customers are experiencing those you know delayed deliveries and sometimes after the promised time as well right and then we are talking about the greener delivery method so i talked about the last mile delivery how you can use the bicycles or electrical vehicles and there is one survey which talk about that 87% of French people would be interested if the last mile delivery is done through using those you know sustainable options like bicycles and electrical vehicles free deliveries so obviously this is another survey showing that 43% of the French online buyers they have already left their shopping baskets vacant because they want free deliveries right obviously you are providing all the

services and then with no sympathy we are just with one click we are returning the product that also you are bearing but still customer is not ready to pay extra so we want free shipping right so that is very important and you have to provide that so obviously then cost structure and profitability is big question for any organization ok so then you can come up that with minimum may be minimum purchase price should be this much only then you will get the free delivery or maybe then you can say that if you are you know paying for this delivery the next delivery will be free so in that case you can make the customer more you know loyal to you because he will return back to your platform because he'll get the free delivery or maybe if returns for returns I don't think there is any policy right now but maybe e-commerce website they can think that if the last 10 orders you have not you know return back because of this you did not simply you did not like the product if there is something wrong with the product you have returned it back then it is okay but simply you did not like the product or because of the color or all those options which were obvious when you picked that product right and last 10 deliveries were accepted by you by any rejection so then maybe next two or three deliveries will be free of cost so those kind of things can be there so you can be more efficient in that delivery tracking already this is now customer is thinking as a you know special feature so i am placing the order immediately i should get the intimation that ok my order is accepted and now it is processed right but yes now because of the busy schedule we all are facing right and then we don't have time to you know go through all the messages so your package is done that message I am getting it is shipped that message is getting then it is it has reached to near your warehouse that message also so many messages now it is out for delivery so that maybe some customers may be annoyed or irritated with this behavior right so they don't want all those messages maybe so but maybe few are very interested so how you can give one link you click on that link and then you can get the updated order so if you are interested you can click on it the same link the way companies are doing right now okay so that is delivery tracking and obviously some key elements of e-logistics is supply chain visibility we talked about we want to track the movement of goods monitor inventory and then potential bottlenecks we want to find out transportation management system so that we can optimize the route we can pick the route and then which carrier will take whether we will go by road by ship by train by air then load planning we can do and we can track the shipments so warehouse management we talked about we have some software we can you know manage properly the inventory and then order fulfillment picking packing shipping everything can be done using that warehouse management system and we can you know utilize the maximum capacity of the warehouse as well as we'll ensure this using these softwares that no item should go over dated outdated in the warehouse so we'll move that inventory in that way So, again inventory management is another point in e-logistics. So, because demands are coming from different platforms. So, you have to consolidate the demand and you have to provide that. That can only happen if you are providing the real time tracking of the

inventory and management of that. so and obviously another thing is maybe you can have storage houses near to customer so that easily you can reach to the customer electronic data interchange obviously manually entry if you are doing that obviously you can make the mistakes and then somehow you can keep some safe level if the maybe demand is only 10 items you will say 12 items to the wholesaler wholesaler will say 14 items to the manufacturer manufacturer will maybe again plan for 16 items and will import the raw material from all the raw material suppliers as per 16 items so actual demand was 10 but then it is up to 16 so that is wrong information so how we can avoid that this can only happen when there is electronic data interchange so global trade management So we can use some software to know about the regulations, the tariff management, customs duties, and what are the international trade norms so that we can know and then we can manage that.

Last mile delivery already we talked about. when you are reaching to the end customer that is last mile delivery. So how you can do that? You can use the optimization software and then delivery tracking apps Sometimes we can use automated delivery vehicles as well. There is no manpower involved, so you can make the deliveries using robots as well. So here the important point is how long you will go to cover, maybe if I'll cover 100 meters more, maybe I can cover 10 more customers, but that is advisable or not.

So proper we can use, make the cost benefit analysis in the software and then we'll say which route I should take, which area I need to cover already it is divided into so many different regions and then accordingly we can plan reverse logistics already we talked about we will just go through what are the different facts and figures if as long we are talking about the reverse logistics ok but this is very very important point when we are talking about e-logistics and you need to remember this that for any if you go to post office you are doing the speed post or may be registered post anywhere somewhere around may be the cost will be 70 to 100 rupees but if you are returning the product I am not getting even single rupee out of that so I am making 4 deliveries and I am not getting single rupee 4 deliveries how so first delivery may be from the manufacturer I am delivering to the distribution center this is first delivery then from distribution center to the final customer this is the second delivery again it will be returned back to the distribution center if there is any problem or may be there is no demand will return back to the seller or the manufacturer from where it is coming right so this reverse logistics platform should be you know is a kind of challenge but we need to go for the efficiency then analytics and predictive insights, obviously, machine learnings and data analytics will help us to predict the demand more accurately, right? And we can make informed decision, we can optimize the processes, and we can anticipate the future demand and supply chain disruptions as well. some of the disruptions obviously natural if you are talking about some natural disruptions obviously that we can we cannot avoid but yes

the other disruptions related to raw material supply related to the distribution network or transportation thing we can somewhere we can analyze that we can predict that using predictive analytics and then blockchain technology already i told you that we are sharing our bank details on that platform so i should feel that there is minimum risk when i'm sharing i'm making the online transaction so transparency security traceability should be at the highest end throughout the supply chain even it's not only about the transaction but it's also about the product which is flowing through that so what are some major challenges if you see 30 percent of the products are returned back and if you talk about brick and mortar stores or retail shops only nine percent products are returned back so this is a big big challenge and already we talked about and people are looking for whether you are doing the free deliveries or not so 49 percent right and when i'm returning the product back so what are the reasons received damaged product is obviously is my responsibility as manufacturer product received looks different okay maybe on the website it looked different and then you received you did not like that and received wrong items and other reasons maybe some other reasons sometimes size or comfort or all that you did not like but this is something 23 percent straight away we need to check this this is wrong item delivered how we can ensure the system where the item is reaching to the right customer. So, at least this we can avoid and then how fairly we can provide the information that we can target the next 22 percent right. So you can see this 67% of the shoppers check the returns page before making any purchase which is quite obvious because I want hassle pre-return and if you are in the end you are saying that this cannot be returned back so then it is a problem. So 62% of the shoppers are more likely to shop online if they can return an item in the store.

So these are some of the challenges related to returns. So some quick information, this is for February month, the survey was done by Amazon. So the results are obvious how this return rate is. But the other point which I want to just highlight here is if you talk about the return products, sellable items are 59%. those we can sell directly but then customer are damaging 32 percent right even these sellable items let's say if you return one shirt back so in shirt the packaging is different right they have so many pins and all that just to properly package that shirt so that when you firstly you interact with that packaging you should feel that delighted that you got the right product right so those pins we are never getting back then we are using specific packaging for you know binding the collar so that also is damaged we need to use these packaging material again we need to use and then obviously you need to wash it again and iron it again so that means that much processing is required even it is directly sellable so this is a big challenge right so related to return so these are some of the small cases if you talk about same day delivery is going to be the next normal or fashion and amazon prime is giving you that you just take the prime membership one time you need to pay this is not only for delivery obviously you will get the same day delivery on the selected items and then you will get free delivery for all the

items and then you have access to amazon prime videos as well right so this is the added advantage basket there as a basket they are giving you so amazon is using this strategy to compete with walmart and other players in the market right so for achieving the same day delivery they are deploying their warehouses near to customer and I told you if you are near to customer any day you can deliver the product so if you are ordering your product by noon you'll get it by 9 pm.

so that is their promise seven days a week and free delivery for over 35 if you are purchasing order for more than \$35 but now if you see these are obviously the wide coverage for them but now if you will take prime membership from amazon you will get 100% free so how walmart started you know with the competing strategy they partnered with the ups which is united parcel services very strong network again talking about in terms of logistics right so but if you talk about the walmart cost is 10 dollar per purchase right and they are giving to some selected locations and amazon as well so they have given some flat 10 dollar delivery and 10% delivery fee right so no minimum order required so you can place that order and then you can go for this is walmart counter move how ebay started competing that only three steps shop from your nearby retail store that means localized stores you need to visit so i'll partnership with the local stores and then those are some dedicated local players so you place order in the morning by noon you will get the order because i am making sure that deliveries will happen from the local stores and using the local courier partners so that is how ebay used this strategy and you can see how this market of same day delivery is increasing either you talk about b2b because we are saying that just in time we want so when we are talking about we don't want to make inventory because inventory is carrying huge cost reduces so we want just in time so same day delivery we want right we want business to customer obviously customer to customer so this trend is increasing you can say this 2027 13.8% will be expecting this you know same day delivery market and why same day delivery is important because 49% of the customers are more likely to shop online if same day delivery is happening 51% of online customers between 18 to 34 years of age young people they don't have that patience to wait right if you're saying that you wait for another two days you'll get this product in a best way no we want it right now right maybe another two days then they will change their mind they are into something else right and then your product is totally obsolete for them so almost 99% of retailers plan to offer same day delivery by 2024 this is their target and this is increasing your 85 percent competitive edge it is providing if you are giving same day delivery right if you're talking about quick commerce in India and already I think I have shown one video on Blinkit and Jepto so they are saying that 10 minutes delivery how 10 minutes delivery is happening usually they are into grocery sales and you you just started thinking of just let's make a cup of tea and then you realize that oh sugar is not there so maybe you can wait maximum 30 minutes obviously so if more than 30 minutes then you'll say okay i'll go to some shop i'll take that and then i'll go to my office right so if you are saying that 10

minutes you'll get the sugar i will be just preparing for other things and sugar will be at my doorstep. So, Blinkit and Zepto and Swiggy because already they have that USP of minimum order. There is no such concept of minimum order. Even one piece of sweet can be delivered.

they started exploiting that existing network of swiggy with swiggy instamart where they are providing the grocery items within half an hour or one hour right so what are those items which we want quickly delivered obviously milk egg bread curd fruit and vegetables we don't want to wait for longer if you are saying after two days there is no sense indulgence items soft drink dessert chocolate cigarette we want instantaneously right and then both last minute and in those items 23% all grocery items we cannot plan because in your kitchen there are so many different items so you cannot say that can keep the inventory track of every item unless your industry your this kitchen is not industry 4.0 supported right or ai is not working on your kitchen and giving you alarm before reaching the safety stock that yeah you have depleted the inventory of sugar and now only maybe for next five cup of teas you are having the sugar and you need to replace the order so so that means this is we can conclude that this is the industry e-commerce platform facing huge challenges but still we are you know stretching it further and further we want same day delivery we want delivery within 10 minutes because we are dealing with the perishable items anyhow we are not going to leave so this the next challenge we have is how we can be so so responsible with the providing those services to the customer and at the same time how we can be efficient so that's all for this thank you very much