

Supply Chain Analytics
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Lecture-07
Supply Chain Drivers

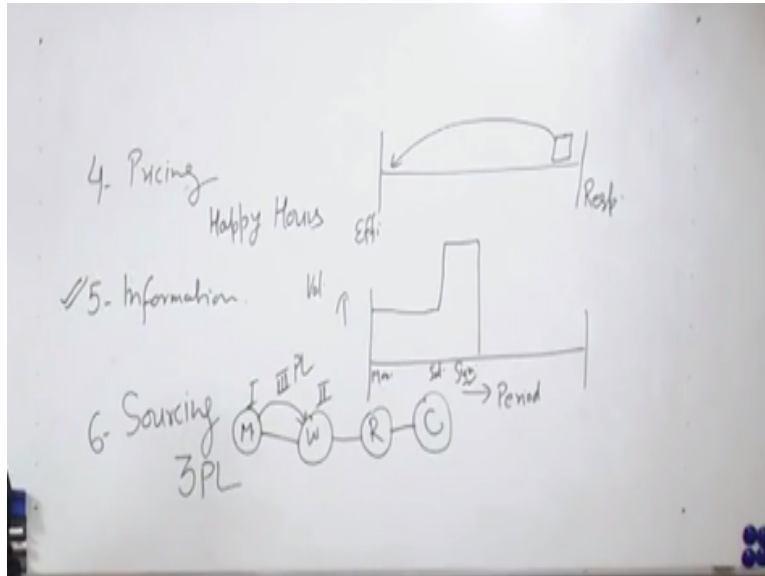
Welcome back, so now we are into the seventh lecture of this supply chain analytics course so far we have discuss the importance of supply chain, we have discuss the role of data analytics into the supply chain management, what is the real time decision making in supply chain management and then in our last lecture we discuss the role of supply chain strategy and we discuss some of the drivers which are important in making the supply chain strategy.

Because how do we use as drivers, how we make them working in real life, so we discussed three important drivers in our last session, these were facilities that what type of infrastructure your building with respect to factories, with respective houses, with respect to retailers, with respect to distributors, what will be the role, what will be the size, what will be the location. That is one very important area of decision which we have to take into consideration for our supply chain management.

Because as we have discussed in our earlier lectures that supply chain strategy ranges from the spectrum of efficiency to responsiveness, so how do we handle these drivers that will take our supply chain either on the efficiency side or on the responsiveness side. So we discussed facilities, then we discuss it is very important driver that is inventory. Inventory is a very very important phenomena.

And lot of discussion will take place in supply chain management classes about the inventory management in our supply chain and third important driver which we have discussed that is the transportation. How do we handle the transportation because logistics is also one of the very important elements of supply chain management, so we have discussed these three important areas in our last lecture?

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Now going for into this discussion of supply chain strategy and handling of driver to get it right kind of supply chain strategy, we have the IV driver that is pricing. Pricing is the fourth driver which will help us to take our supply chain from the efficiency to the responsiveness site. And pricing most of us may feel is a area is one of the actor in the marketing domain, but pricing can play very important role in supply chain management also.

Now it is very interesting question and we will love to answer that how pricing can play a role of driver in case of supply chain management. Because when we talk of four piece in a class of marketing when it is very appropriately said the role of pricing at different stages in the product life cycle, but how pricing plays important role in case of supply chain management.

So it become very interesting, now as we know we have discussed in our very first class that supply chain management is that function which ensures the proper balance between demand and supply and we know for lot of product there is a period of very low demand and then there is a period of peak demands.

You have example of electricity, you have example of tourism, you have example of investments. So these are some of the areas where all of a sudden demand increases to a very high level, a peak level and rest of the time that remains on a low level. You can understand like in case of tourism this is the period and this is the volume, now the volume of torus visiting a particular tourist place for 6 days a week will remain at this level from Monday to Saturday.

But as Sunday comes you will find a quantum jump in the level of tourist visiting that particular place because Sunday is a holiday, so you reach to a very high level of demand on Sundays for the product known as tourism, so on for various other products you have a particular time when demand increases to a very high level, you visit restaurants and during evening hours around 8 o'clock to 10 o'clock.

You will find long queues in front of good restaurants because that is the time most of us will like to visit the restaurants for our evening meals, so restaurants give the concept of Happy Hours and this Happy Hours is nothing but using the pricing tool, using the pricing driver for matching of demand and supply, you have a fixed deposit in a restaurant, you cannot increase or decrease that capacity with respect to your demand.

But by creating a differential pricing mechanism you can to some extent match the demand and supply so when in Happy Hours you reduce the prices you give extra benefits if you visit before 7 o'clock, if you visit a restaurant before 7 o'clock on a Saturday evening they give you one extra beer, they will give you one plus one type of offer.

So that some of the people who are case-sensitive can take that offer and then they can quit the available supply which is there with the restaurant with the increasing demand during the peak hours, so some of the demand of peak hours can be shifted to lone peak hours or of hours by this kind of differential pricing. So how do use this differential pricing so that you can match demand and supply that is one very interesting area.

You can see in some of the countries like in Singapore and in some of the European countries on highways on toll ways where we pay toll for using a particular Highway, if traffic increases what a particular density the toll rate increases and the toll rate increase is actually to divert some of the passengers using those toll rates to those roads which are non toll roads. So that you can reduce the traffic condition on the toll roads.

Because toll roads people want to use for driving at high speeds for covering distances in less time but if traffic condition is there any purpose will be lost, so the pricing mechanism can be used to divert to give alternative routes to suggest people to go on alternative routes because

only those people who require emergency solutions with the help of toll on road, can use that would effectively.

So pricing is basically used for making your demand and supply and in variety of ways whenever you find there is a kind of discount, there is a kind of some kind of offers for using a product on of time or of routes you have this pricing mechanism, so pricing also give few ideas that you are supply chain is mostly on the responsive site and this is efficiency site, so by pricing some of the customers normally you are positioned here.

But by using this pricing mechanism some of the customers can be shifted to decide, those who are looking for low cost solutions, those who are looking for glucose solution to take the advantage of this pricing tool they will take their position to this site so same facility, same infrastructure, same type of paraphernalia can be used by the pricing method to shift some of the customers from the responsive side to the efficiency sites.

And then you can serve in a better manner to those customers who are actually looking the responsive solution, those who are ready to pay premium prices for getting the responsiveness from the supply chain. So pricing is a very effective tool, it is not only in the marketing but also in the supply chain that we can use it for the customer satisfaction looking into the interest of responsible deficiency type of customers or you can say that pricing helps us there are two ways in which category statement in which we can understand the use of pricing.

One pricing helps us in meeting the demand and supply gap, so you can match your demand and supply that is one important category statement, the second categorical statement is that price in helps in filtering out efficiency looking and responsiveness looking for customers from your entire customer base. So those customers who are more interested in efficiency they will filter out to the side and those who are ready to pay premium for the sake of responsiveness in the supply chain they will remain to this side.

So pricing can help you to filter out your customer and appropriately you can design your father solutions you can go for new product development as per this filtering process. So pricing is another important driver. After placing there is one more important driver in the

supply chain which helps in deciding the position of our supply chain on this efficiency responsiveness spectrum. That is information.

Information is another important driver, which is very important and particularly after 1980s after this IT revolution, the importance of information as a supply chain driver has increased tremendously and therefore nowadays it is almost impossible to believe that a supply chain can exist without robust information infrastructure. The success of companies like Walmart is mostly attributed to its very robust information infrastructure.

So information infrastructure also plays a very very important role in the supply chain positioning from efficiency to responsiveness, and this is one particular driver irrespective of cost you invest in this information infrastructure, it helps you either in achieving efficiency or in achieving the responsiveness, you do not handle it differently, but the way customer wants you can provide that solution immediately at low cost.

So with the same infrastructure, with the same type of information system you can achieve the things efficiency and responsiveness. So we say normally in our supply chain language we say that information driver actually has been waived efficiency type of characteristics in a responsive supply chain. Information driver has waived efficiency characteristics in a responsive supply chain. So what I am trying to say that Walmart is an example of highly responsive supply chain.

You find large number of products under single SKU and at the same time those products are considered to be everyday low price product, that is the USP of Walmart and that USP is being achieved by using the information network with the help of this information they very appropriately handle their inventory management, they very appropriately handle the transportation management and as a result of that they are able to achieve high level of efficiency in inventory and transportation uses.

And because we are able to maintain large number of SKUs as shipping units, so it is a very responsive supply chain that way, so because of information infrastructure because of proper information network you have in your supply chain you are able to put the characteristics of efficiency into a responsive supply chain. The other important use of information in a supply chain because supply chain is a game of mutual trust between various entities of supply.

We have from manufacturer to wholesaler, to retailer, to customer. Now whatever we are discussing this only is possible the result of these things are only possible when there is a proper coordination, when there is a mutual trust between various entities of the supply chain. Now earlier when it was a manual process when the information, information network are not very strong.

At that time it was possible that may be intentionally, maybe unintentionally some of the information, some of the data some of the important piece of business was not shared with your supply chain partners. But now information networks, information infrastructure has eliminated all these possibilities. Now because of information infrastructure is available and all the entities are properly integrated in that information infrastructure.

So whatever is happening at any place in the supply chain at any stage in the supply chain that will be known to all the members of the supply chain, so the very core of the supply chain management on which it is best that is the trust, that is the corporation, that is the coordination. All these things can be easily achieved with the help of information infrastructure and all kind out of manual interpretations, all kind of manual passes of information can be eliminated with proper information infrastructure.

So as we are moving into more sophisticated information sharing, we are moving into collecting more data related to better supply chain management the importance of information as a driver is continuously increasing and probably this course of supply chain analytics is based mostly on the ability to share the information across this supply chain. So that the manufacturer, the wholesaler, the retailer.

All these entities can take decisions in real time environment. So information is a very promising a very important driver now for the success of supply chain management and then another important driver which is going to take very important call for India as a nation that is Sourcing. In our supply chain there are large number of activities, you develop new products, you manufacturer them, then you distribute them through and network of wholesalers and retailers.

And for that purpose you need to have some kind of transportation arrangement, so that these physical products can move from one place to another from that is stage to further and further. So these many activities are involved. Now it is almost impossible for any single organisation to have enough competency in all these activities which are required in a supply chain.

I may be good in manufacturing, I may be good in developing the network, I may be good in marketing a product but it is very very difficult that I am excellent in all the fields. So now it is time, it is the time where I concentrate only on those areas where I am excellent and I leave or I take help of other people who are excellent in their respective areas and therefore the concept of sourcing comes.

But I am Limited in my supply chain to those areas where I have core competency, where I can do that work in most excellent manner, work last manner, so I may be a good manufacturers, I may be a good distributor, I may be a good transporter and for the rest of the activities we take the help of different type of parties and these are known as 3PL third party logistics because they are not the primary contributor to my supply chain.

But they are providing a service I have source them to provide particular level of service in my supply chain. In this supply chain to understand the concept of this 3pl third party logistics manufacturer can be the first party, this wholesaler can be the second party, now if I want to transport some of the products from manufacturer to wholesaler, so either I can send my own truck, I am owing trucks, I am owing lorries, so I can send my own lorries from this and to this end.

So this is a direct connection between first party and second party, but sometime I feel that I am not a competent person or it is not right for me to handle this transportation activity also. So in that time I can involve somebody from outside, I can take help of Gati, I can take help of DHL, I can take help of some other transporter who can help me in transporting my products from this end, this facility to this facility and this is third party logistics.

Sometime I feel that this manufacturing is not my cup of tea, I wouldn't distribution so I can also manufacturing also and you will see in large number of our FMCG products if you see

me wrappers you will find that the product is manufactured by somebody else and marketed by somebody else and we know normally the one who is marketing the product.

So in that way manufacturer is outsource now, so depending upon my core competency because I am a good marketer, so I want to leave it myself only to the marketing activities and not to the manufacturing activity, so in this particular case the manufacturing it outsource, so as I said that in whatever activity I feel that I am complete, I will do that activity on my own and rest of the activities I can outsource.

Now outsourcing has its own plus and minus. Sometime outsourcing is very good, but sometime when you see economy as a whole sourcing cannot be as good as providing the employment to a local economy etc. many times you outsource your activities to some other country because you find you can get cheap labour, you can get easy resources, but at that time employment type of issues from your economy go to some other economy.

So that is the kind of political issues which are there in case of sourcing, but if I limit only to the supply chain point of view sourcing can help me in achieving efficiency also, sourcing can help in achieving responsiveness also. So depending upon the competency of outsourced partner, it can be useful in achieving efficiency or responsiveness. Sometime my outsource partner is very cost conscious, so in that case with outsourcing I can achieve the efficiency.

Mostly in the case of transportation if I am taking help of somebody in transportation in outsourcing my transportation activity normally it is helpful in achieving the efficiency and you see when we are outsourcing some kind of activities which are emergency oriented, in that case it is for achieving the responsiveness. So depending upon what type of partner I am choosing I can achieve efficiency or responsive through sourcing.

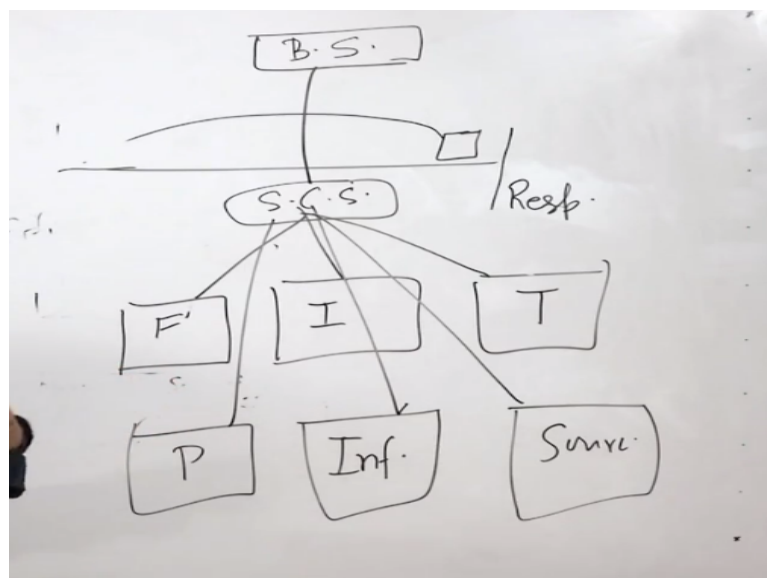
It can help you in reducing the cost of your product or it can help you in providing the solution at a very fast rate. So efficiency and responsiveness can both be achieved by taking their partner appropriate partner in your supply chain activity, sometime you do not want to outsourcing, because you know that your partners will not be able to achieve either than required level of efficiency or required level of responsiveness.

You have the example of companies like DHL etc, they own, their own aircraft to achieve a particular level of responsiveness, so they feel that were on their own transportation feel you achieve a particular level of responsiveness. On the other hand you have the example of Indian Post. Indian Post uses this facility of Indian Railways for transporting their packets from one place to another place and through that they achieve high level of efficiency.

Because of low cost of transportation from the Indian Railways the same is available to Indian Post and therefore post office is able to maintain the efficiency through outsourcing and DHL on the other side is not outsourcing to achieve the high level of responsiveness, so how do we handle the outsourcing partner, in what case we should use what it says we should not use that will define your position on this efficiency responsiveness spectrum.

So with this way we saw that how we need to handle our 6 important drivers to have a strategic location on the supply chain spectrum from efficiency to responsiveness, because you will not take decision about a particular driver, you need to take decision about all six drivers together, starting from facilities, inventory, transportation and these 3 pricing information and sources. So these are the six drivers and you need to take decision for all the six drivers in a single decision environment. So that you can use these drivers effectively for better results for better achievement of the strategic point of view of your supply chain.

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So finally if I want to summarise we can say that this efficiency to responsiveness these things are dependent on effectively handling the 6 drivers, so if I put these 6 blocks year representing 6 drivers, so you can say that these 6 drivers help me in achieving my supply

chain strategy and that supply chain strategy is basically from this efficiency to be responsible at night and then this supply chain strategy will help me to achieve my business strategy.

The overall business strategy which I have that will guide by supply chain strategy and that supply chain strategy will be achieved through these drivers of facility, inventory, transportation, pricing, information and sourcing. So you need to see that how are you using collectively because it is very important to understand that all these drivers should be handled in one single direction.

If you handle for example I want to have a very efficient supplies and today I am taking decision about facility, so if I want to have a efficient supply chain, so facilities should be centralised, I should not have large number of distributed facility, so that I can maintain economy of scale. But on the other side when I am taking decision about inventory I am keeping large number of inventory.

When I keep large number of inventory obviously my responsiveness will increase and my cost will also increased. So these two decisions or not in sink with each other, facilities or more of the efficiency site, but inventory move towards responsiveness site. So there will be a conflict between handling these two drivers of facilities and inventory. So therefore it is very important.

That all these driver should be handled in such a way that you get a particular position for your organisation on this efficiency responsiveness side and there should not be any conflict between the drivers. Otherwise there will be a problem and you will not be able to achieve any particular position for your organisation. So with this we will like to close today session about the drivers of supply chain.

And how these drivers will help us to achieve a particular position on this supply chain spectrum and therefore we will see the use of data to take appropriate decisions about all these drivers because the supply chain management is all about taking right decision with respect to facilities, with respect to inventory, with respect to transportation, pricing, sourcing and information.

So in our further classes, in our further lectures we will see that how the data, real time data will help us in taking decisions with respect to this drivers. Thank you very much.