BUSINESS MARKETING - TECHNOLOGY FOCUS

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Lecture 19: Supply Chain

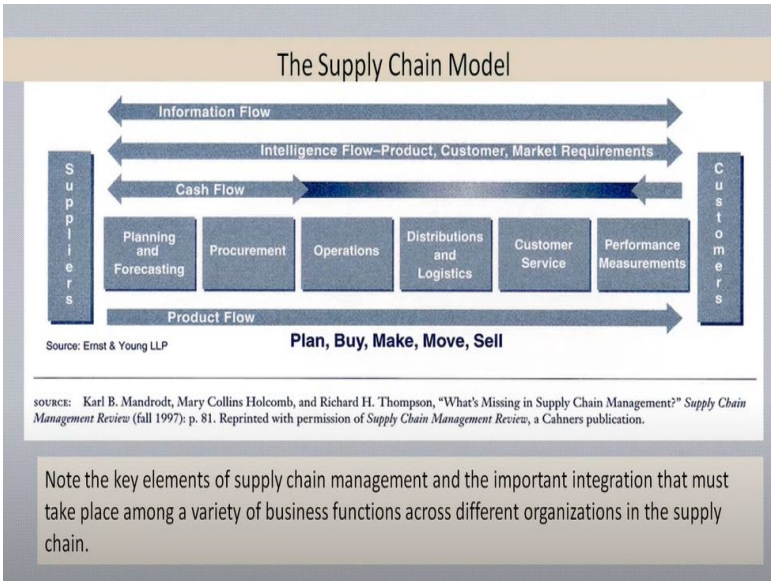
Hello, welcome to our next session on B2B marketing with technology focus. Our topic for this session will be supply chain management. We have discussed industrial selling. We have discussed industrial procurement. Earlier we had discussed about distribution in the context of the marketing mix in B2B.

This supply chain management in a way is a complete view of all these activities right from the source to the final customer, the entire chain of operations are normally looked at by supply chain management. So, the formal definition we will come to just now.

So, we are looking at therefore an innovative approach to the distribution process and we are going to look at the various links that integrate production and customer through the various activities.

So, the integration of business processes from end user backwards to the original supplier, manufacturer, supplier that makes products, services available and flow through

the value chain and the generated information flow, all that are covered by this topic of supply chain management. So, this diagram is an excellent depiction of a supply chain management in all its aspects

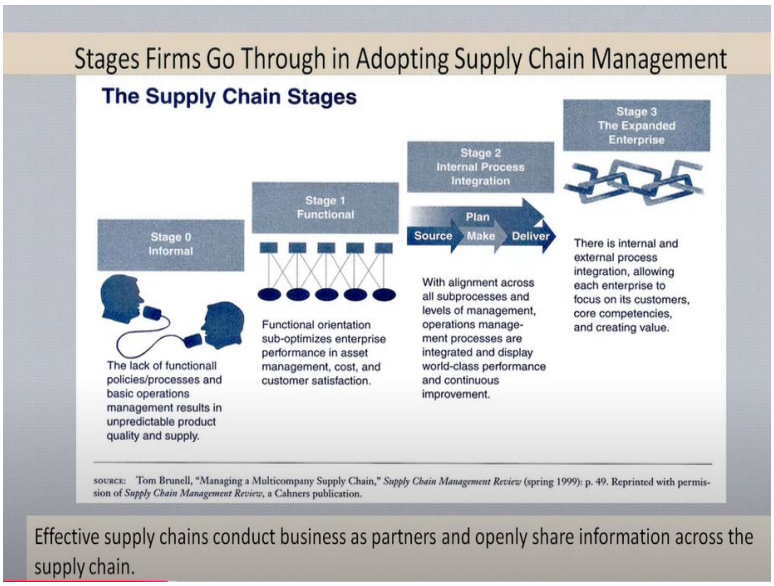


You see on the left-hand side at the extreme, we have the supply, the suppliers. That terminology will include the manufacturers and maybe the factory, warehouse and so on. But going forward from there, we are looking at the various blocks, operational blocks of procurement, operation, distribution and logistics, customer service ultimately to the customer. So the customer is getting it from the distribution and logistics block who are backed up by operations and procurement. And then it goes finally to the supplier. So this is the entire chain.

And the arrow which is given at the bottom shows that the flow of product is from the left to the right. But if you see the bidirectional arrows which are on top, the very top one indicates information flow. Now, information flows up and down this supply chain because information is generated when the product services go forward from the source to the customer. Information will be generated at every stage and information also will be generated from the customer end which will have to flow back to provide the feedback to the supply system. And out of the information various analytics generate intelligence and that also flows back and forth.

Now the cash flow that means the money that is paid by customer in exchange of the products and services primarily flows from the right to the left as opposed to the product flow from the left to the right but that arrow is also bidirectional because there will be sometimes some refund or some surplus stock, disposal, etc. So, therefore, some money may also flow from the left to the right. That is why that arrow is bidirectional. So, we are therefore, in supply chain model, looking at all the activities related to planning, buying, making, moving, selling, everything.

Even the act of final delivery and acceptance etc, are also part of the supply chain in case of B2B.



Now, the supply chain as we know it today in most organizations which is on the extreme right hand side the stage 3 was not always like this. In fact even today a startup organization or a very small organization operating within a very small ecosystem may actually be at stage zero, which is on the extreme left-hand side, because there things happen almost in an ad hoc fashion. So, products are purchased or products are ordered as and when necessary.

There is not a much of a system at that stage because as a start-up you are at a very early stage. So, you are still almost in a laboratory sort of scenario or initial prototype to realization scenario. So, at that stage we will have lot of ad hocism and therefore, lot of

person to person communication making the procurement and delivery payment etc. happen. In stage one, there are some functional distribution and formalization that takes place, but in a stage one organization, there still will be some duplication, the same source may be supplying to different requirements to the different departments.

So, there are therefore double arrows from the different nodes because it is not fully streamlined. So, there are duplications and there are overlapping flow of products, information and so on. The stage 2 is where many organizations are there even today. Here some computer-based, software-based integration happens.

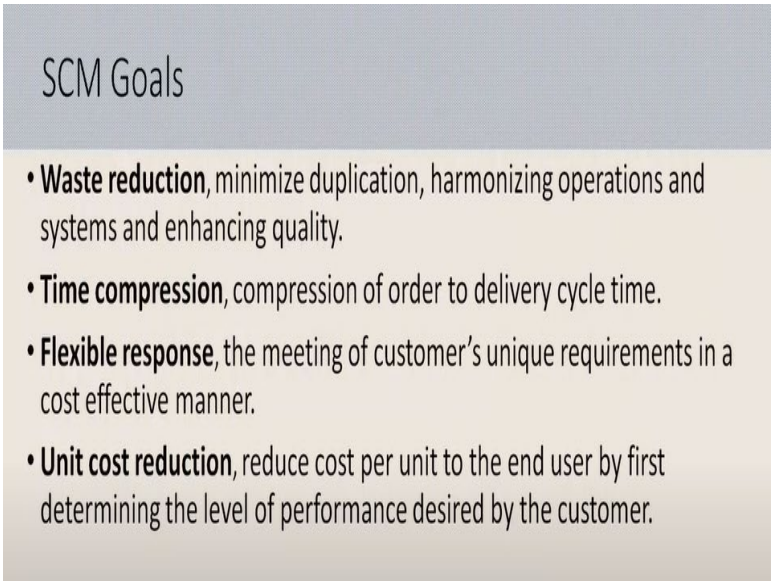
So, the source, that means material, raw material procurement stage to the manufacturing stage to the delivery stage to the acceptance stage, all that are well integrated and that's why you see there are not very many overlapping activities and the whole thing is well planned and happens in an integrated fashion. In the last block or stage 3, in fact, most automotive manufacturers like Maruti or Mahindra Mahindra or Tata Motors, they operate at stage 3 because they not only connect the source, procurement, manufacturing and other aspects of operations, delivery, all that within the organizations are definitely networked and integrated. In these organizations, their tier one suppliers.

So, for example, for automobile manufacturers, the people who make the body parts, suppliers who make the steering system or the brake system, suppliers who make the door lock system, all these sub-assemblies or building blocks of the car or of the motor vehicle are all connected to the sort of what we call the expanded enterprise supply chain network so they are very tightly coupled so the steering system manufacturer will know time to time almost moment to moment they will know that what are the changes happening at their customer end that means the car manufacturer or the vehicle manufacturer their production schedules are tightly locked to the production schedule and delivery schedule of the tier 1 suppliers.

Steering system manufacturer will know exactly what are the demands because many of these systems operate on just in time basis or there are all efforts made. So, there are not lot of inventory pile up in the pipeline.

So, this almost coupled networks make that low inventory system possible and because each player exactly knows the requirements of the upstream players and the upstream players know that what is happening with the production and delivery of the downstream players. So, that is called the stage 3 which we call the expanded enterprise where internal and external processes are integrated allowing each enterprise in the value network to focus on their next stage customer and core competencies and value creation all that are quite integrated.

But in many cases you will find organizations at stage 2 where there are alignments across the sub-processes and levels of management, operations management processes are integrated and they display world class performance and continuous improvement but they may not be connected to the network of their external suppliers or as it happens in case of the extended enterprise sometimes even the automobile manufacturers top customers or B2B customers may also be connected to this network. That we will not see usually. These external connections we will not see in a stage 2 operation. But in stage 2 operation, all the internal operations are pretty much connected and networked.



So, the goals of supply chain management I was mentioning about inventory just now, but not only inventory all kinds of waste even activity wise wastes of duplication etcetera are must be minimized.

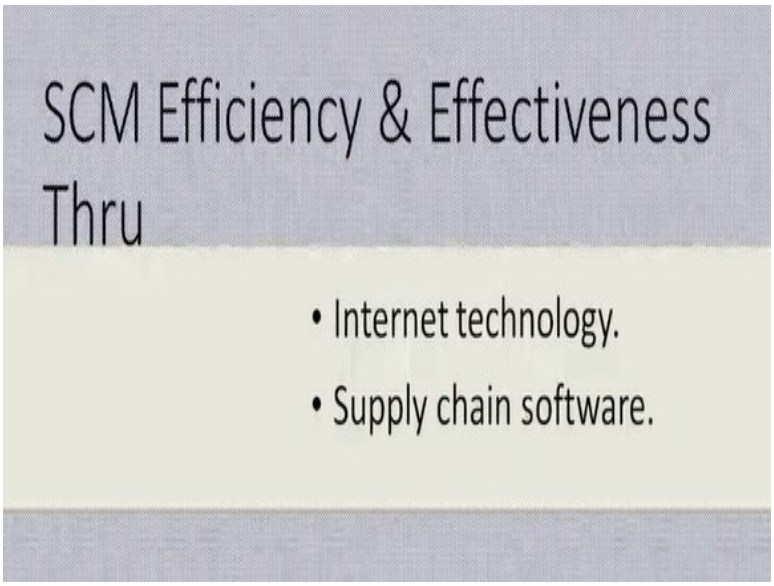
So, minimize duplication, harmonize the operations and the systems overall, so that quality and productivity both are optimized. Time compression also is a continuing need. Time crunching because as we know again the famous saying that time is money and that is more true in case of business to business operations. So the compression of the order or even the need generation or need identification to the process in between to the order and then order onwards to the various operational processes leading to the final delivery, this entire cycle time will be continuously crunched.

So, there are many instances, for example, in the automobile industry, you can easily find some of those case studies on the internet and you will find that many cycle times have been reduced to one-tenth or even one-fiftieth of the previous standards. So, this is a process. So, waste reduction and time compression both are a moving goal. Organizations are continuously improving their performance on these.

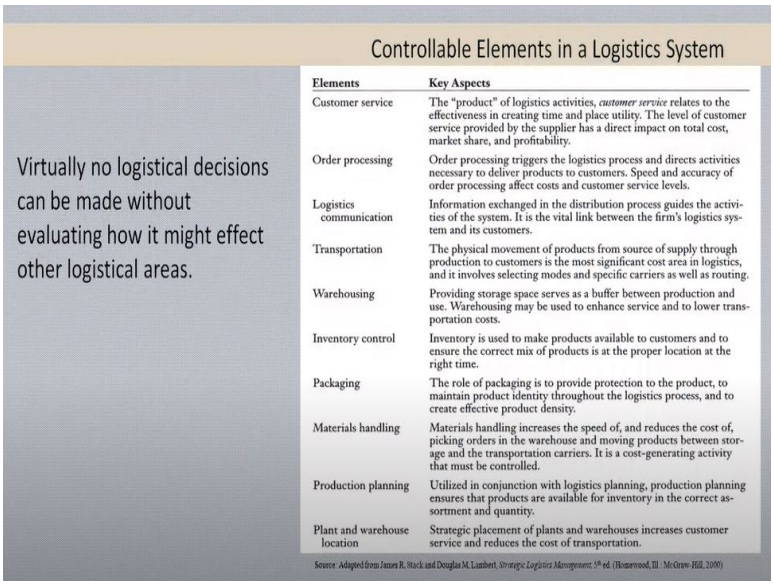
And the increasing the flexibility of the whole system is also another major goal of the supply chain management system. So, that if there are sudden shifts in the customer's requirements or there are sudden changes in the marketplace, then the whole supply chain management must be able to respond to that quickly. So, for example, automobile manufacturers, again I will continue with that example. They will often have sudden demands of certain types of vehicles from the market to which they have to quickly respond. or they may often have a tremendous pressure to reduce the delivery lead time of certain models.

At that stage, they want the supply chain management, which is in stage 3, where the expanded enterprise, that means the manufacturing organization of the automobile manufacturer, as well as their major suppliers, they all must respond flexibly to the sudden increase in demand or sudden change in the demand pattern, etc. So, waste reduction, time compression, flexible response and finally, unit cost reduction. These are the supply chain management goals. And this unit cost reduction utilizing the optimization procedures in the supply chain management are again areas where some of the major manufacturers like automobile manufacturers have achieved tremendous result over the last 40-50 years and you can find many of those famous cases in companies like

Toyota or even our Maruti or Tata Motors. You can find lot of examples which are available on the web and it will be worth reading those.



The supply chain management efficiency and effectiveness for these things that we just now discussed about waste reduction, time compression, flexible response, all these have become possible more and more because of the advent of internet technology and various kinds of supply chain software. Many of those software which were earlier in different other companies, a lot of those have already got all integrated in Oracle or SAP and such major software suites. So, in the supply chain, we have physical supply, physical distribution, and we have information production and information distribution.



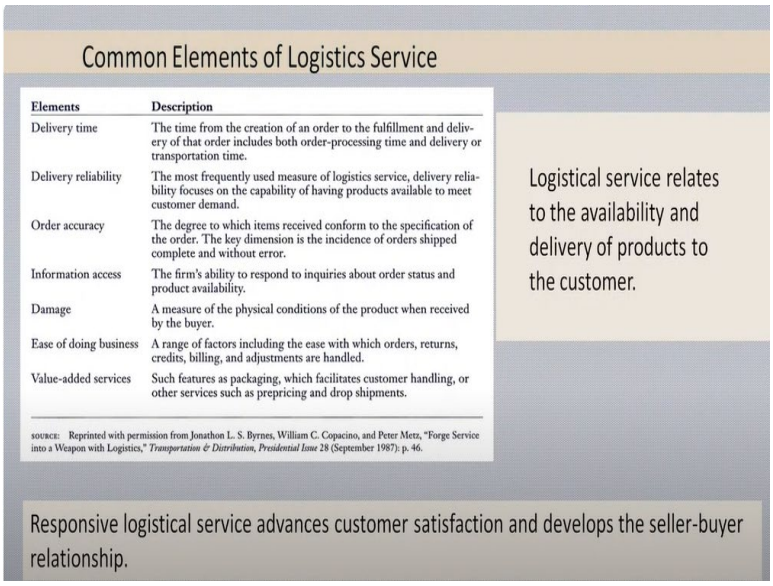
Controllable Elements in a Logistics System

Elements	Key Aspects
Customer service	The "product" of logistics activities, *customer service* relates to the effectiveness in creating time and place utility. The level of customer service provided by the supplier has a direct impact on total cost, market share, and profitability.
Order processing	Order processing triggers the logistics process and directs activities necessary to deliver products to customers. Speed and accuracy of order processing affect costs and customer service levels.
Logistics communication	Information exchanged in the distribution process guides the activities of the system. It is the vital link between the firm's logistics system and its customers.
Transportation	The physical movement of products from source of supply through production to customers is the most significant cost area in logistics, and it involves selecting modes and specific carriers as well as routing.
Warehousing	Providing storage space serves as a buffer between production and use. Warehousing may be used to enhance service and to lower transportation costs.
Inventory control	Inventory is used to make products available to customers and to ensure the correct mix of products is at the proper location at the right time.
Packaging	The role of packaging is to provide protection to the product, to maintain product identity throughout the logistics process, and to create effective product density.
Materials handling	Materials handling increases the speed of, and reduces the cost of, picking orders in the warehouse and moving products between storage and the transportation carriers. It is a cost-generating activity that must be controlled.
Production planning	Utilized in conjunction with logistics planning, production planning ensures that products are available for inventory in the correct assortment and quantity.
Plant and warehouse location	Strategic placement of plants and warehouses increases customer service and reduces the cost of transportation.

Source: Adapted from James R. Stock and Douglas M. Lambert, *Strategic Logistics Management*, 5th ed. (Homewood, Ill.: McGraw-Hill, 2000)

So, the controllable elements in the supply chain system or the logistics systems, another name, you can look at it from the bottom upwards. So, we have plant and warehouse locations where strategic placement of plants and warehouse, they increase the customer service level and reduce the cost of transportation and the time of transportation. Going up from there, the production planning system, the material handling system, the packaging system, the inventory control, the warehousing, the transportation to the warehouse, the logistics and communication, the order processing and manufacturing and the order taking and customer service in that respect. All these are all integrated in the SCM.

So, virtually no logistical decisions can be made without evaluating how it might affect the other logistical areas because it is understood now very clearly that these entire system operates like an ecosystem. So, if you tweak at one end something, you have to also adjust then all the other layers or other blocks on the network. So, you can actually read in detail these controllable elements in the logistics system under each heading and they are pretty much clear.



Some of the elements which we were talking about just now that we need to crunch the time, we need to reduce the unit cost, etc. So, in this particular slide, we are showing the common elements of the logistics service.

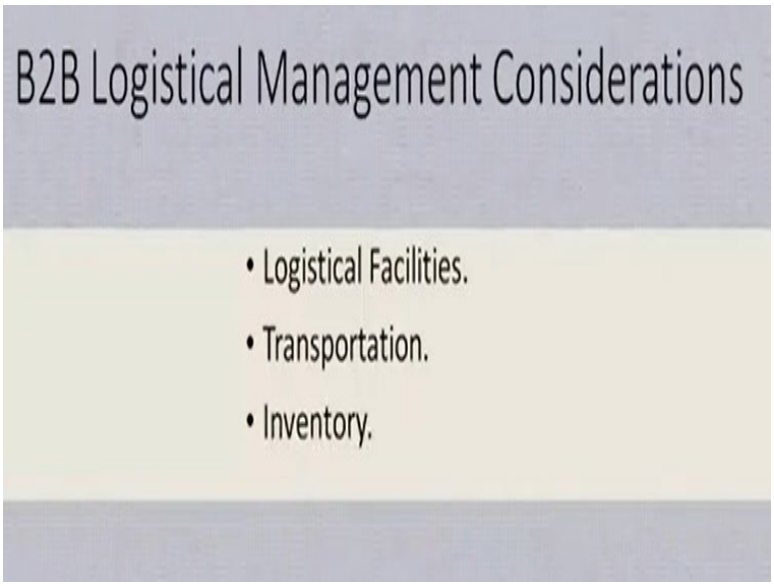
And in the responsive logistics service which advances customer satisfaction and improves the seller-buyer relationship, we will see focus on these activities as well as targets of improvement. We will see continuous focus on delivery time which I was talking about just a little while back where we have seen 10 is to 1 or 50 is to 1 improvements in the recent past.

Delivery reliability, a very interesting concept where we frequently measure the logistics service delivery reliability by way of looking at capability of having products available to meet customer demand and we see what percentage demand has been met on time and all these will be continuously measured. The elements are clear, the activities under each are also that way easy to understand and again, I would say that go through this slide in detail. I am not covering each and every point because they are very easily understood. Some of the concepts may be interesting to refer is that for example, the ease of doing business.

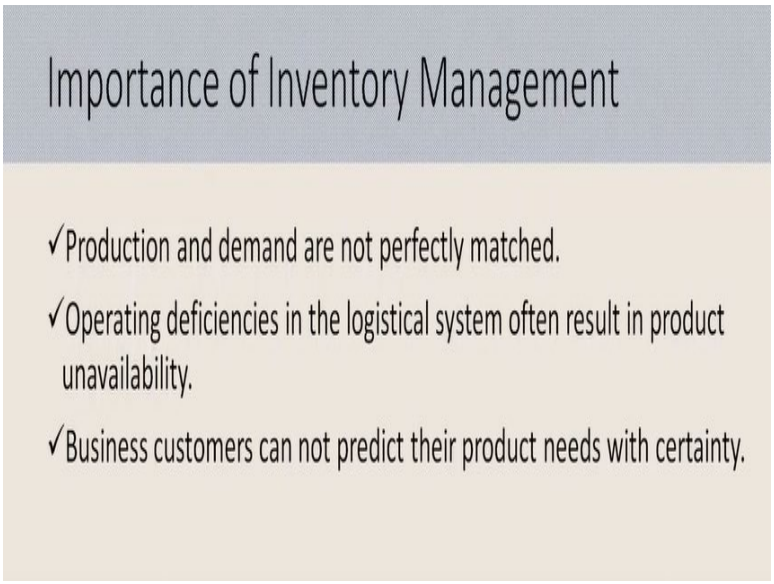
Here the supply chain management actually plays the logistics service plays a major part in improving the customer's level of satisfaction with the ease of doing business. So, here

we look at the range of factors including the ease with which orders can be placed, returns can happen.

Credits can be issued in case of returns and billing and adjustment are all handled in ease of doing business. So, you see there are major satisfaction elements have been identified on the left and what those blocks mean, what kind of activities are covered by those blocks are explained on the right.



So, the B2B logistical management considerations are by way of logistic facilities, transportation, inventory management, all that and the inventory management is I just now mentioned and again I am emphasizing because this is a major element of cost that is almost embedded in the logistic system and often there will be pile up and that is actually a totally infructuous expenditure. It no way adds value to the entire value chain.



And therefore, production and demand are to be perfectly matched. That is therefore a primary goal of having a good logistic system. That's what we saw in that stage 0 to stage 1 to stage 2 and stage 3. All the application of software and all the application of networks, all the application of internet applications are for basically managing inventory more effectively and efficiently. Because this is the first sign, the inventory buildup will be the first sign that something is not in order in the logistics system.

So, that is why this is very tightly monitored. And the other thing is in inventory, as opposed to the B2C system, where there are many many buyers and there are many many suppliers, the fluctuation happens not in an uncontrolled fashion because this multitude of suppliers and multitude of buyers can absorb fluctuation. But in B2B, we are dealing with few suppliers and few buyers comparatively of course. As a result of which the uncertainty can really throw the whole system out of gear unless it is actually designed for that kind of flexible response that is what we mentioned.

So, we need to have that ability in the system to take some variable shocks. So that concludes our short session on supply chain management which is a complementary activity. This whole logistics management system is a complement to the sales management system, to the distribution management system, to the procurement system, all that particularly we discussed at length about e-procurement etc. and e-commerce. In all that a sophisticated logistics system is absolutely required and the presentation that we

handled today in this session gives you some first understanding of the way it is achieved and the building blocks of a flexible, responsive, fast, time crunched logistic system. Thank you.