BASICS OF SUPPLY CHAIN MANAGEMENT

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Lesson No 1 – Basics of Supply Chain Management

Welcome everybody. In this course we are going to take a look at the basics of supply chain management. We will take you into some basics. What is the supply chain and what is value management? A value chain. Something about strategy and concepts. And last but not least, how did supply chain evaluate? First, I will take you to a simple supply chain. The supply chain. We all know the food production chain. It starts at a farm. At the farm we have cows, they make milk, they make meat and they make use of all the elements, what's the earth is giving us. It used to be that the production was at the farm itself. But nowadays we bring it to other factories. Those factories are producing our cheese, what we use every day. But the factory is usually placed close to the source. So after that we need to distribute the goods and the distribution will go one side to the restaurant or the other side to a retail store where I buy the goods to prepare it at home. This supply chain consists of several elements. I will go into detail for the different elements in the next part. So first of all, what we can see is that that basic supply chain always consists of three entities. We have a supplier, we have a producer and we have a customer. So in all the stages we can connect the supplier to the customer and in between we have the production. What we also see in this supply chain is that we have a primary product flow. The flow of products, in this case the milk from the cow to the production facility, the produced milk to the distribution entity and so on. That's the primary flow. The primary flow is always going from source to destination. Of course, we want to get paid for our services. So there is also what we call a primary cash flow. That cash flow is going in the opposite direction. So we will have the customer paying the producer for it and the producer, the manufacturer will pay its suppliers. So the primary cash flow is always flowing in the opposite direction of the primary product flow. Then we will have the third flow. The third flow is the flow of information. We need to communicate with the different elements in the chain. That information flow is bi directional. It's coming from supplier to producer to customer, but also the other way around. Customer, producer, supplier. Then we have a fourth flow. And maybe in some cases you can also identify a fifth flow. What is attached to that fourth flow? The fourth flow is the return flow returns from customer to producer, from producer to supplier, or even returns which are being

caused by over ordering, ordering the wrong product or maybe some repairs or not functioning products. The reverse product flow is flowing in the opposite direction of the primary flow. And of course, and I mentioned already the fifth flow. There is also a return flow of cash involved, usually with the reverse products flow. Of course, a supply chain is not simple. Those three entities, they are connected. So we have more customers in between. We have distribution elements. There are maybe more manufacturers and those manufacturers will have suppliers and their suppliers will also have suppliers. In supply chain management we are always identifying, let's say the first level of suppliers, the tier one material suppliers. We have the suppliers from the suppliers, tier two and tier 3,4,5,6. As long as you want to go on. That makes that supply chains are becoming more and more complex. So in a supply chain we have a lot of links, connections between suppliers, manufacturers, distributions and customers. And it can even be that in one part, in one supply chain I am the customer and in the other supply chain I will be the supplier. All those elements are being connected via transportation. So what we will see in every supply chain we have our raw material cost, we will have our manufacturing cost, we will have inventory costs. All connected via transportation. In now a days world, we want to reduce the complexity of the supply chain. They are not only complex due to the number of nodes they are having. They are also complex due to the fact that supply chains become global. I will show you in a simple way how reducing the number of transactions, the number of nodes in the supply chain will reduce the total complexity of the supply chain. So in a normal supply chain we have connections between the producer and the customer. Take in this example, I have three producers and five customers. That means that the number of transactions, it's three times five, it's 15. By changing that supply chain and putting for instance an intermediary party, a distribution company in between, I'm adding the number of participants in that supply chain, but will reduce the number of transactions because what I will have, I will have a connection from producer to intermediary and I will add to that the transactions to the customers. So in this case it will be only three plus five, eight transactions. That means that my complexity is reduced a lot. And that is one of the targets in supply chain management. Making supply chains which are manageable nowadays the supply chain are becoming more what we say close loop. That has to do with the urge of being sustainable and not, let's say wasting raw materials. In a closed loop supply chain we will have a supply chain. What is self supporting. An example can be taken by, for instance, paper manufacturing. Paper manufacturing is using trees as its main source. It will make from that paper packaging materials. So packaging materials will be used by a manufacturer. It's going to the consumer. It's used in the distribution centre and in the retail outlets. By collecting that material, we can make a closed loop supply

chain not putting new material or at least limited material inside that supply chain. Supply chains are, of course, complex, but in planning perspective, we can identify different ways of setting up a supply chain. We call that the customer order decoupling point or the concept around it. There are basically five points we can identify in a supply chain. First of all, I can say I make and send it all to a local stock. That means that the part up until my inventory point close to the market Will be based on planning and the part from that Inventory Con Will be fully based on customer orders. That's why we call it the customer order decoupling point. So if I take, for instance, the example of a kitchen appliance in that point, that means that if I go to my retail store at the corner of my house, Then I will see a product And I say, this is mine. That is the moment the order is placed and the product is attributed to me as the buyer. We can also make a point closer to the, let's say, factory to the assembly of it. So then we make it to stock, Usually to a central stock. And in that part, I can also assign that order to me. An example of that one is Dell computers. Dell computers used to have that. I could assemble my computer online and it was being produced in the factory. In that factory, the order was already attributed to me. That is a make to central stock location. The third point we can see we can assemble that product currently done a lot in car manufacturing but also in high end furniture. I'm having all the components on stock And I will assemble them on basis of the customer order. The fourth point is, of course, the make to order environment. I have all the base raw materials on stock And I make it on that customer requirement. And last but not least, we have the engineer and make to order environment. The ETO usually don't in ship building in housing, they make the product based on my requirements. So we start drawing the design. After that, we buy the goods we produce and we bring it to it. It's of course, obvious in that part that the first element is all forecast based. So the risk for the manufacturer is the lowest at the engineer to order situation, In the make and send to stock situation, Then, of course, we have to do everything based on forecasting. The risk is there that I do not sell my product.
