E-Business
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Lecture 20
Supply Chain Management - III

Welcome back. Last class we were discussing about integration interoperability and we saw what are various (inter) dimensions of interoperability? We saw that two major things can happen one is because of this data level incompatibility another one is service level incompatibility. Then we saw that what are the dimensions of collaboration?

We saw that the collaboration can take place in two dimensions, one is your inventory level collaboration another is your planning level collaboration. Now in this context we saw that if there is inventory level collaboration and no planning collaboration VMI is the option which many companies are adopting. Now we are going to discuss about taking example of this VMI system we are going to discuss what are various interoperability issues that can come during collaboration.

To remind you in the last lecture we have discussed that two systems if they are integrated they have to be eventually interoperable. But simply making the two systems interoperable they may not be integrated because during integration many strategic level issue needs to be resolved.

Let us say for example if two companies do not decide that they have to be collaborating on inventory dimension and they have to become VMI partners, do you think that resolving a (compati) (techni) technical compatibility issues between the information systems of both the organization is of any use? No, because first thing is that (dis) both the companies have to first strategically decide they have to be in partnership.

Then only technical issues will come into picture. But right now through this motivating example we are going to see in this VMI system assuming that both the companies have now strategically decided that they are going to be in VMI partnership. We are going to see what kind of interoperability issues can come up and how the information flow between the entities and what kind of (intero) interoperability issues can come up? So as shown is in this diagram this is the supplier side activities in a (VM) VMI system.

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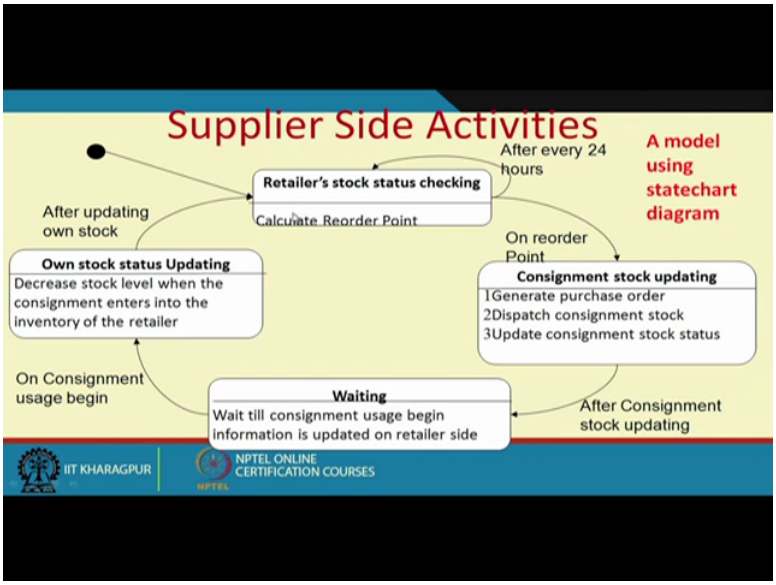

So what happens I mean we can say these are typical activities in a VMI system if they are integrated? If both the supplier and the retailer are integrated. So what the supplier will do? The supplier will actually take the retailer's stock (tatus) status. So the supplier has to have certain facility for checking the retailer's stock (ta) status in its ERP system or otherwise if it is available on a web based system. So after the retailer checks it possibly every 24 hours or so it will keep checking.

Then the supplier knows his own inventory position and what kind of lead time he is going to take. So therefore based on that he can calculate the reorder point. And look it is the real system in which real time it is assuming that it is connected with the (po) point of sales system of the retailer. always it will be updated. So the movement the suppliers system senses that the reorder point has reached, now who is calculating the reorder point? The supplier is calculating the reorder point himself not the retailer.

So now you understand what is the meaning of inventory level collaboration? This reorder point which otherwise would have been calculated by the retailer himself the retailer would have explicitly given the purchase order to the supplier. Here actually the supplier senses the (pa) retailer's stock status and it calculates the reorder point. This is the supplier side activity. Then when the reorder point reaches as I have already explained now it is the time for the supplier to send the consignment stock.

So what the supplier will do? Supplier will first generate the purchase order, then it will dispatch the consignment stock. See while (dispichi) dispatching the consignment stock there

will be a physical flow but the corresponding information flow is it has to update this consignment stock status in its own inventory system who the supplier will update the consignment information in his own system.

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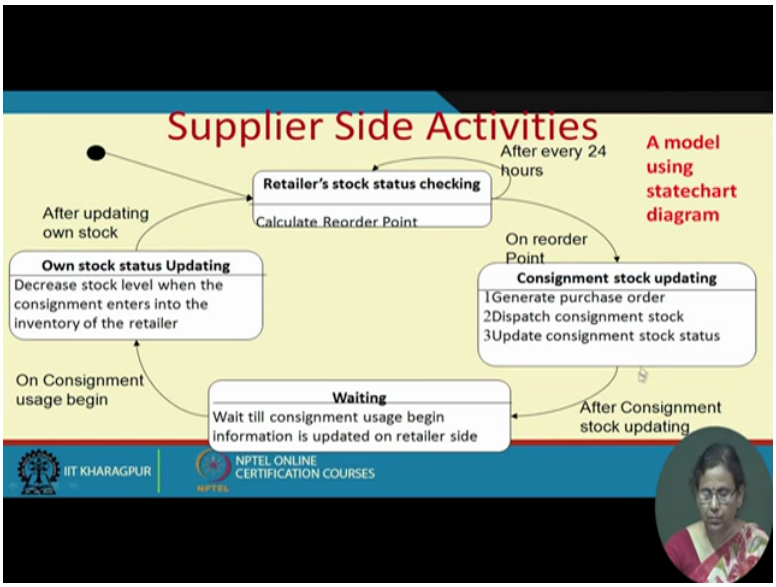

Then after consignment stock updating it will be waiting for the retailer system to start using the consignment stock. Look till this point retailer has not opened the consignment stock. The consignment stock is sent over the web sorry in the physical channel and the details of this consignment stock shipping is sent to the retailer. But as I have told you the consignment stock is something which is actually the supplier's inventory but lies in the premises of the retailer.

So the supplier simply waits when the retailer is going to use the consignment stock. So when the (reta) consignment retailer starts using the consignment stock after his existing stock is over when he starts using the consignment stock at the beginning he has to send some information to the retailer sorry to the supplier. The retailer sends this consignment stock usage begin information to the supplier.

Then what supplier will be doing? Now the consignment stock which so far was in the inventory of the supplier itself but lying in the premises of the retailer will now be going to the retailer's inventory. So what this fellow will do this supplier will do? He will be updating his own stock status. So he will decrease the stock level when the consignment is entered into the inventory of the retailer.

After updating his own inventory he knows that now he has to again check the retailer's inventory because there is no consignment stock, it has already gone to the retailer's inventory. So he starts checking after every 24 hours possibly. So this cycle continues at the retailer's side and the information flows between retailer and supplier and information update takes place at the supplier side.

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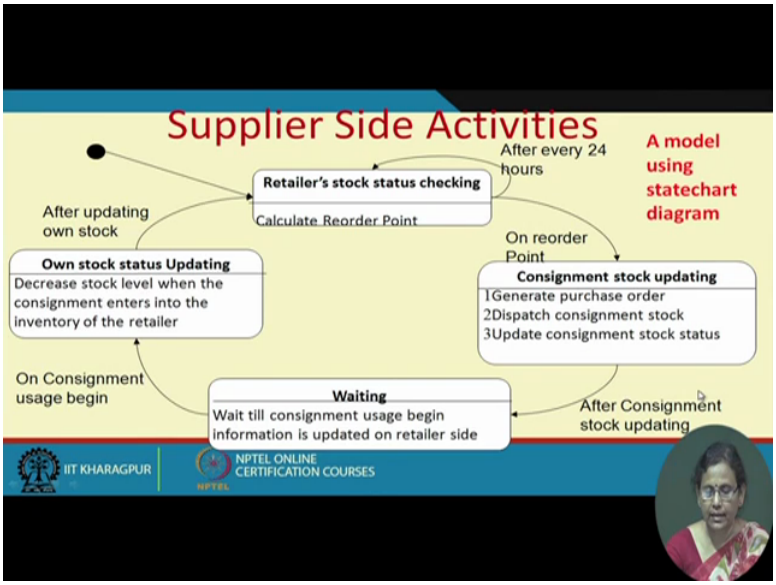

Now let us go to retailer side activities. This is again a state chart model and here what happens when the stock is available at the retailers point the retailer continues using the stock. When the stock is over he will be using the consignment stock. Accordingly he will update his own stock level because it will go to his own inventory and then it will inform the supplier that it has started using the consignment stock.

And because it gives the information to the supplier, supplier will be immediately sending the invoice because so far it was in the stock of the supplier therefore he has not sent the invoice so far. So now he has sent the invoice and once the invoice is sent the retailer will be making the payment. After receiving the invoice it will be making the making the payment.

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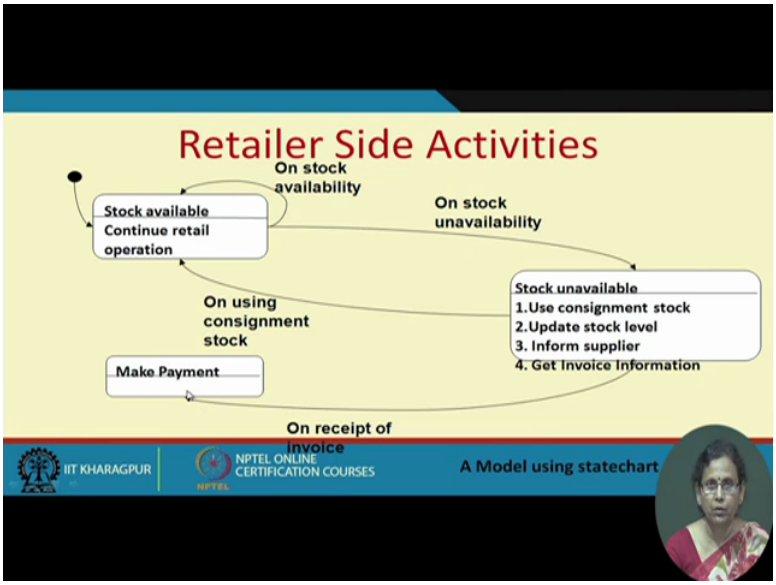

Possibly here for making the payment again another party will be involved that is the bank. In fact two parties will be involved both retailers bank and suppliers bank. In one of the earlier lectures we saw that during the B2B transactions how the payment information flow between the banks. So now the payment will be made. But right now in this diagram we are not showing the banks involvement. But what we have shown is that how the information flow and what are the activities between retailer and supplier side. Now between the supplier and the retailer this information flow.

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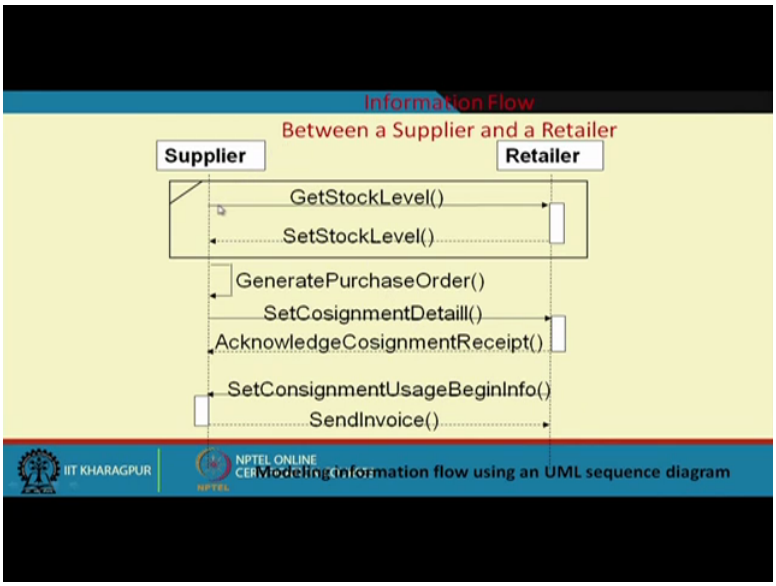

Supplier will be getting stock level from the retailer. Retailer will be sending his own stock level. Supplier will be generating the purchase order. It will send the consignment stock details stock detail to the retailer. Retailer will acknowledge the consignment stock receipt then when he starts using the consignment stock he moves it into its own inventory.

He will be sending that (in) information to the supplier and supplier in turn will be updating his own inventory and sending the invoice to the retailer. So to realize this information flow some services had to be hosted on the supplier side. In fact when we will continue with this example when we talk about the technology to various about the website based technologies for information integration in some later lecture.

But right now let us try to see what are various integration issues in this VMI implementation. First of all it is the information integration. The supplier is responsible for maintaining the retailer's service level therefore the supplier's information system needs to be integrated with that of retailers to share the point of sales data and inventory status.

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Then there has to be planning synchronization. So the supplier forecast the demand and prepares the purchase order and send it to the retailer. The retailer my request to modify the purchase order if certain exceptions arise such as fill rate is not satisfied or the retailer expects the demand to go up, etc. Or he can accept the purchase order. Then this synchronization is essential to optimize the inventory level.

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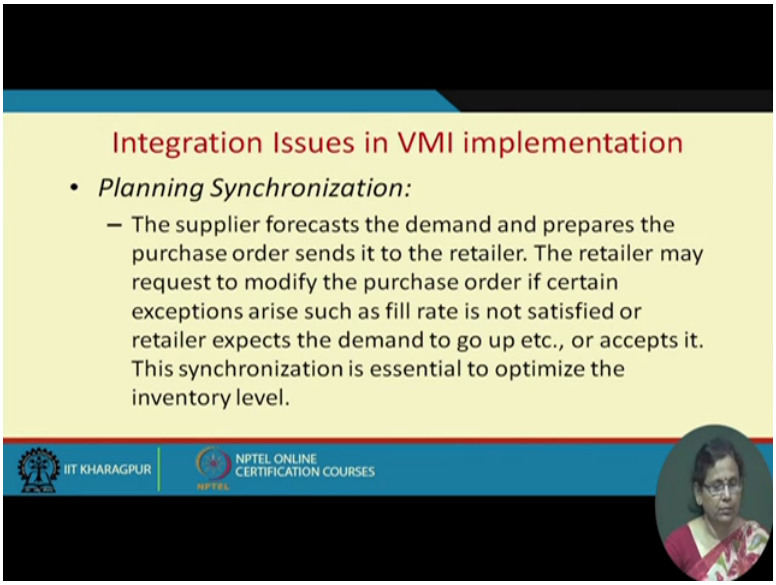

Then there has to be workflow coordination and here we were talking about the web services. This web services are essential for this coordinating this workflow. This whole VMI system can be viewed as two interrelated cycles, the replenishment cycle and the payment cycle. Each cycle is a workflow consisting of a set of activities linked together. So why this information flow between both the entities to carry out both the cycles has to be achieved.

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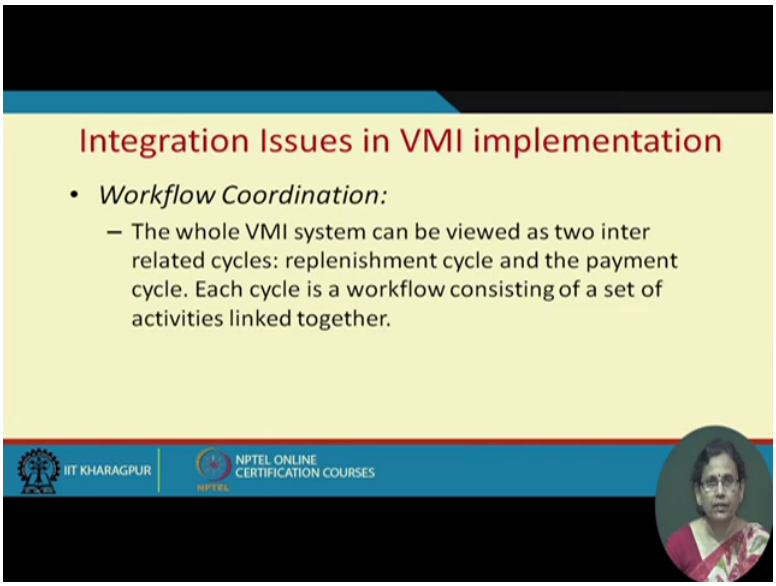

Then next integration issue is about monitoring and measurement. Here monitoring of retailer and the vendor activities is essential to the success of VMI process. VMI operation consists of three flows, information flow, material flow and credit flow. Three flows are to be

synchronized to make a successful VMI system. Suppose the retailer starts using the consignment stock but forgets to report it to the vendor which means he does not update the status in the VMI system, then the replenishment cycle gets disrupted.

So which means the other party will not be aware of the status. So next consignment stock he cannot send in right time. So therefore monitoring and measurement is also very important.

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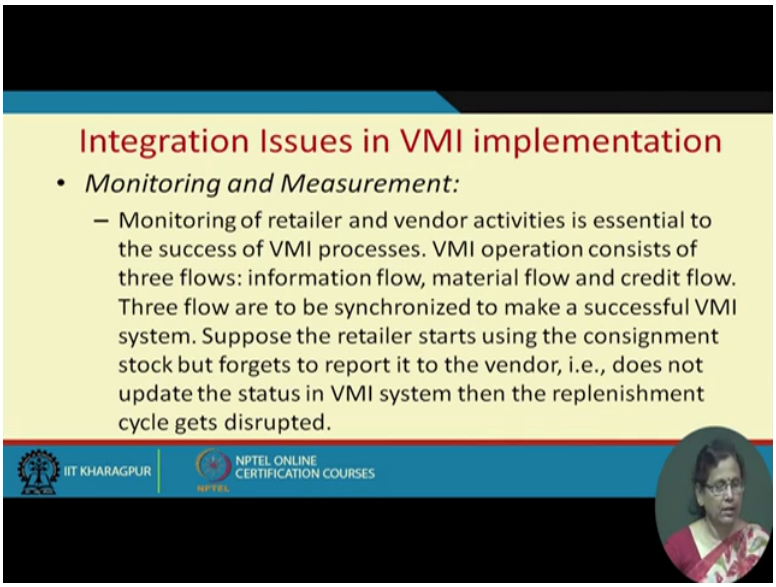

So with this we will stop and we continue with our (lectu) next lecture subsequently.