Working Capital Management

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Lecture - 17
Risk and Cost of Holding Inventory

Welcome students. So in this class we will start learning and talking about the inventory management. One important current asset or the most important you can say like this, most important current asset in the series of the current assets which we talk say in the working capital management, different current assets or the level of different current assets we have to build up. First asset is the inventory.

As we have talked many times in the past also that what is the inventory, what is the importance of the inventory, what is the need of the inventory and how it impacts the overall profitability of the firm. If you do not keep inventory it may impact the production process. If you keep inventory it will increase the cost right or if you talk about the inventory of finished goods because we have the different kind of inventories.

One is inventory of raw material. Second is inventory of work in process, and third is the inventory of finished goods. If you do not have the sufficient inventory of the, if you do not keep the sufficient inventory of the raw material what will happen? Your production process may get affected. To keep the level of inventory at the lowest level, in Japan manufacturing firms invented a technique which we call as just in time.

People misunderstand this concept that under JIT the level of inventory is 0. But it is not true. Level of inventory is not 0 in the JIT also. We keep the minimum level of inventory under the JIT also. So that depends upon the type of the supply chain arrangements we have in and around our production unit. The source of raw material and the usage of that raw material.

The firm who has to make use of that raw material and the firm who has to supply that raw material, the distance between the 2 firms, the supply chain arrangements between the 2 firms, the logistics between the 2 firms and the means of transportation in between the 2 firms are important factors. If we keep the level of inventory maybe 0 or maybe we create a situation that we will not keep the inventory of raw material.

We will have a situation like that straightaway the raw material will start from the supplier's place as and when we place the order and by the time the material goes at the lowest level in the manufacturing process at the plant we receive the another truckload of the material and it directly goes to the plant, we use that at the plant and then we order the another truckload of material and straightaway that also goes to the plant. So that way we are creating that situation.

But see that is possible in the economies like US and Japan where the logistics are very efficient, road condition is very good. Railways condition is very good excellent. So we cannot compare those economies with our economy. Still in those economies also level of inventory of raw material is never allowed to come down to 0. That is also not allowed to come down to 0.

They also keep some inventory but yes you can say the level of inventory can be the lowest as compared to the inventory we are keeping in India. The inventory keeping means those firms keeping in their economy is much lower. That is a one part of the story. But you cannot run the show with the 0 inventory because anytime we can be in the situation of the stock outs and stock outs has a very serious impact upon all levels or at all levels.

First if there is a no inventory of raw material and whatever the inventory we had we have already exhausted it on the plant and truckload of material which was expected to reach at one particular point of time that could not reach because of the obstacles maybe you call it as a traffic jam or maybe because of the bad road conditions or anything else it could not reach on the plant on the time. So what happened? Their production process got stuck.

It got interrupted. It got hampered and what will happen? Your plant is idle. Your workers are idle. Your entire production facility is idle and we are paying the cost but we are not using that facility to the extent we could have done that. Similarly, in the WIP stage also work in process stage also material moves from the one stage to the other stage. So if the there is no material on the first stage certainly the situation will also arrive at the WIP stage also, at the work in process stage also.

And we have to face the same situation as we have the situation at the opening inventory level or maybe at the beginning stage of the manufacturing process. Because there is no regular supply of inventory so there is no availability of material at the beginning of the process, in the middle of the process, nowhere and finally entire your plant and workers are lying or sitting idle. Third is type of the inventory is the inventory of finished goods.

We keep some inventory of finished goods at the desired level. Because we do not know the demand from the market. Though we have already calculated that how much units of our product we sell in a week or in a fortnight or in a month in the market, who are our distributors, what are their average monthly orders, how much we are going to supply to them and how much they are going to demand from the firm.

So we try to maintain a proper synchronization between the supplier, as a supplier, the firm as a supplier and the different distributors in the market. But beyond that also sometimes the firms receive the unforeseen orders which are not from the regular distributors or the channels of distribution. Sometimes some there can be some you can call it as once in a while orders also.

For example any say we are at IIT Roorkee and IIT Roorkee for example has decided that in all the classrooms we will provide the colour TVs right and we decided that these colour TVs will be purchased from Samsung. So normally Samsung knows that their monthly consumption of their colour TVs or sale of colour TVs by their distribution process or their distributor dealers in the market is say 500 units.

And if they are only manufacturing that 500 units it means the level of inventory in the warehouse of the finished goods, finished colour TVs is 0. They are not keeping any inventory. Straightaway their raw material is coming to plant, being process, converted into finished product and from the plant itself it is going to the market to the distributors. Nothing is going to the warehouse and warehouse is empty.

Now IIT Roorkee want to buy 100, 200 colour TVs and they say they means plan it this way that we will directly buy from the company because we are going to buy in bulk so rather than buying it from some distributor we will buy it from the company directly or even from the distributor also. When any distributor receive an order of 200 colour TVs from IIT Roorkee, he does not have the stock.

He will ask the company that I want to sell 200 colour TVs to IIT Roorkee which is not a regular buyer. They have placed the order once in a while. Please supply me 200 additional colour TVs. So even the Samsung at the company level itself they would not be able to serve the order. So it means they have lost the order. They have missed the bus. Maybe IIT Roorkee can shift to Sony or maybe they can go to LG or some other company because we quickly want the supply.

So it means that also has a cost means not being inventory not being available also has a cost and that cost is called as the stock out cost. Stock out cost is one that we could not make that order, we could not serve that order, we could not serve the market with that order and number one we lost the sales, we lost the revenue, we lost the profits. This is one, material effect you can say, material loss and the other loss which is you can call it as invisible loss.

And that loss is called as the loss in the goodwill, the loss in the reputation and that is a very serious and the big loss. So it means the moral of the story is that despite the fact inventory has a cost only. It does not earn anything for us. No company in the world can run the show by not keeping certain level of inventory at all the 3 levels. If they assume a situation straightaway a truckload is coming from the supplier, going to the plant, being converted to work in process.

From the work in process it being converted to finished goods and straightaway the finished goods are going to the market. Nothing is in the godown of the warehouse of the sorry of the inventory. Nothing is there in the godown as raw material inventory. Nothing is in the warehouse as the finished goods inventory. So it means we have that situation which seems to be very you can call it as interesting situation and every company would like to have that situation.

But along with the positives of that situation there are certain negatives also and negatives we have seen that it may interrupt the production process because of the lack of the availability of the raw material or it can have the stock out cost also that has we have received some unusual order from the market. We are not able to serve the market because we do not keep any inventory of the finished goods in the warehouse and ultimately we have lost that opportunity.

We have to pay the big price for that as the stock out cost. So it means we have to keep the inventory. Finally we have decided we have understood it every firm is supposed to keep the inventory and inventory is the important current asset. First asset, inventory is the first important current asset because it constitutes the highest amount of the total inventory of the working capital in as compared to the all the current assets.

And another limitation you can call it as or demerit of inventory also is that it is least liquid asset. You cannot convert that inventory into cash as and when you want it or as and when the firms want it right. This is the biggest most limitation of the inventory. If you keep an inventory and the level of inventory is not optimum nor too high, neither too low and if have the very high level of inventory and if want to convert that inventory into cash, can you do that? You cannot do it.

Because inventory cannot be sold as and when the buyer seller wants to sell it in the market. Inventory will go to the market, will be possible to be sold in the market if the buyer wants to buy it means there is a demand for the company’s product in the market. So it means if there is a demand only then the inventory can go to the market. Otherwise, it cannot go to the market.

So if it cannot go to the market we are keeping a high amount of inventory rather than earning a good revenue or profits for us is only causing a larger amount of the cost. So we will have to learn how to manage the inventory as a important current asset.

So first of all decide that looking at the manufacturing process, looking at the product we are manufacturing, type of the product we are or the products we are manufacturing, looking at the demand supply situation in the market we will have to decide what is the optimum level of raw material as inventory, WIP as inventory, finished goods as inventory right.

After that we will see that if you are keeping the optimum level of inventory at all the 3 levels in that case we can assume neither it will impact the profitability negatively nor the firm has to pay the cost which are called as the stock out cost and nor the plant or the production process has to be say interrupted or get stuck with for the want of raw material. So we will have to think about it.

Since it is least liquid, since it is least liquid so when we study the liquidity profile of a firm, when we build up the liquidity profile of any firm while studying the working capital management you see we calculate 3 ratios, 3 most important ratios which are called as the liquidity ratios. First ratio is the current ratio, second is the quick ratio and third one is the super quick ratio or the cash ratio.

So in the difference in the current ratio and the quick ratio is what? In the current ratio we take current asset divided by current liabilities. And we calculate the current ratio which we say that if this ratio is 1.33:1 it is appropriate. More than that is bad. Lesser than that is risky. When we calculate the quick ratio, acid test ratio, quick ratio what is the difference in that ratio?

We take current assets in the numerator, current assets minus inventory divided by current liabilities. So we are subtracting the inventory from the current assets while calculating the quick ratio or the acid test ratio. Why we are subtracting inventory from the current assets because inventory is the least liquid asset. You cannot convert inventory into the cash as and when you want it. It is not true in case of the current assets.

Like you see talk about the accounts receivables. Accounts receivables can be to some extent, not to the fullest extent but to some extent can be converted into cash as and when we want it if they are good quality receivables. If they are bad quality receivables I do not say anything about that. If they are the good quality receivables they can be converted into cash as and when we want it and if we talk about the third asset that is cash.

It is already cash so again we have to learn the management of cash because keeping too high level of the cash is also not good. It is also bad. So we will have to learn about these 2 assets also. But I have been saying that say converting receivables or accounts receivables or trade receivables into cash or the credit sales into cash is quite possible or easier as compared to inventory, how? See that credit sales or accounts receivables appear in the balance sheet when?

When we sell on credit we have sold the material, passed on the material to the buyer but we have not received the proceeds or the selling price which is due to be received from the buyer and he has bought the material from the firm on credit. That amount will be received at the later date and there is a pre-specified credit period. Firms sell for the for the pre-specified credit periods.

In India their credit period ranges between 45-60 days so we have to think about that period. Say for example we have sold to somebody for a credit period of 45 days. It means from the date of sales we the seller has to wait for 45 days. On the 45th day the buyer is supposed to make the payment to the seller, one. Similarly, the buyer is also not bound to make the payment prior to that credit period because that credit period has been given by the seller to the buyer.

So it means the question arises how the cash can be received from those receivables which are going to be collected or going to be available in cash after 45 days. Say for example any firm sells on any date and after selling means the credit period is 45 days but after selling means after 5 days after selling the material on a credit period of 45 days from the seller, the selling firm needs the funds right.

Now since they have sold it for 45 days of the credit period to the buyer they cannot force the buyer to make the payment immediately that is just 5 days after the sales. Because still there is 40 more days credit period is to go. Only after 45 days the buyer can be compelled to make the payment as the credit period has come to an end. But if the selling firm needs the funds adjust after 5 days they can they have 2 options to get the cash.

They can request the buyer that if you prepone your payment by 40 days, we will give you the huge discount maybe 2, 3, 4% discount we will give u. So if you are want to make the payment after 45 days okay we will you will have to pay this much amount to us but if you can make the payment today that is 40 days prior to the due date we will give you 5% discount. Say for example in that case say if somebody has to make the payment of 1 lakh rupees to the firm.

So in that case how much he has to pay that by paying 95,000 Rs or maybe if the discount is 10% by paying 90,000 Rs the buyer is set free from his obligation and the seller is also getting the funds though 10,000 Rs lesser he is getting, firm is getting. But they are getting 90,000 Rs at the time when they want it. If that happens perfect. So it means at least you could get the liquid cash against the expected payment of 1 lakh rupees you could get the 90,000 Rs as the liquid cash.

So the receivables can be converted into cash as and when we want it if the other party also agrees. But for example the situation arises that the other party does not agree. They say that we do not have the liquid cash and we have got the credit period from you as the seller for a period of 45 days so certainly on the 45th day we will be making you the payment of 1 lakh rupees. Before that we do not want to make the payment and we do not have the funds to pay.

The seller cannot compel because they have entered into an agreement contract of sale that yes 45 days credit period, this much is the invoice, this much is the sales. This is the date of sale. This is the date of purchase and this is the due date of the making the payment by the buyer to the seller, finished. What option, second option then the seller has to get those funds back? The second option is the bank.

The seller can go with that invoice with those bills of credit sales which they have sold to the other firm and the credit period is 45 days; 5 days immediately means 5 days after the sales if the seller needs the funds, seller can go to the bank and they can request the bank that look we have sold for this much of amount on credit to this second firm XYZ Limited. This payment is due to be received by us after 45 days; 5 days have already lapsed. Still we have to wait for the 40 days.

But we need the funds today. So you keep these bills with you. Give us some amount against this and on the due date after 45 days total period either the buyer will directly make the payment to you, we will instruct him or if he will make the payment to us we will return it back to you with interest. Now the bank will analyze and see the quality of that buyer or the quality of those accounts receivables, what is the quality of those accounts receivable.

If the quality of the accounts receivables is very good, if the buyer is enjoying a very good credit rating in the market, very good financial reputation in the market, bank will certainly know about it. So bank would say that if I discount these bills today we are going to get sufficient financial benefit because bank charges in 2 ways. Number one is the administrative charges or the discount charges you can call it as.

And the second thing is they charge the interest for the period for which the funds are being lent by the bank to the seller. So now the total time period is 40 days and invoice value is 1 lakh rupees. So what will happen? Bank would say that yes. Normally the rule in India is if the bank finds the quality of the receivables is good, the buyers quality, buyers financial reputation is good and there is no possibility of the default from the buyer's side after the end of the credit period.

So bank would agree that it is a good investment. So bank would say that yes. Normally in India the percentage rate is 80%. Banks discount the bills, credit sale bills to the extent of 80% if they accept the financial reputation, the credibility of the buyer to the desired level. So they will immediately agree that okay we will discount these bills. We will keep the invoice with us as a say you can call it as guarantee and we will immediately we can give you 80,000 against this invoice of the 1 lakh rupees. So firm will get immediately. At least 80,000 is is available as cash.

For remaining 20,000 on the due date when the payment will be made by the buyer either directly to the bank or to the seller and seller will deposit it in the bank. Bank would get entire 1 lakh rupees. And out of that 1 lakh rupees, bank has already paid 80,000 Rs to the seller so bank will adjust for that advance and now for the 20,000 Rs bank first will calculate the interest of on that 80,000 Rs which were given to the seller by the bank 40 days before.

And the interest on that on the pre agreed date plus the administrative charges plus some commission banks charge for giving this kind of the services. So for example the total interest plus the commission, administrative charges of the bank works out as 10,000 Rs. So bank out of the remaining 20,000 Rs Still we have to wait for the 40 days, bank will deduct 10,000 Rs and 10,000 more rupees will be given to the selling firms.

So this way also as we were talking about that the firm is giving the selling firm is giving a (()) (23:19) or proposing to give the discount to the buying firm at the rate of 10%. So in that case also the seller was going to get 90,000 Rs. In this case also the seller in total has 90,000 Rs. So it means banks come to the rescue of the firm, the selling firms as and when they want or they want to convert their accounts receivables into cash.

So there is a quite sufficient or the good possibility of say liquidating the current assets which are in the form of the credit sales or the accounts receivables. So accounts receivables are also convertible into cash if there are they are of the good quality, current assets. Cash is already cash. But this facility is not available in case of the inventory.

Inventory has to be kept as inventory and maximum we can do is that if we are able we want to sell this inventory in the market and if the firm does not enjoy the good reputation in the market or the firm's product is not a welcome product in the market. So what will happen? Some buyer will buy the product from the firm but on the credit. So what maximum the firm can do is, selling firm in that case is converting the one asset that is inventory into the credit sales into the accounts receivables but not in the cash or not into the cash.

So inventory is converted into credit sales into accounts receivables. One asset into another asset but not into the cash. So liquidity, liquidity of the inventory is the least most. So we will have to be very careful while learning to manage the inventory. How to manage the inventory is very important concept because it is the first asset , is the largest asset, is the biggest asset and we will have to think that how to keep the inventory.

How much inventory to keep it, all the 3 levels and how to manage it so that the firms do not block more funds into the inventory. Similarly, cost of managing inventory also remains as low as possible. Production process is also facilitated. That also goes on and market is also served as and when there is a demand for the firm’s product in the market. So we will have to keep all these things in mind while managing the inventory.

So in the 3 assets, important current assets, we talk about the management of 3 important current assets, inventory is the most serious kind of the assets we will have to think about because larger chunk of the funds is going to be blocked in the inventory if you keep the inventory beyond the stipulated level. Receivables are convertible into cash either by giving discount to the buyers for preponing the payments or by discounting those credit sale bills with the bank.

In the process, I just I told you and that process is called as the bill discounting facility given by the banks in India and it is a very popular facility make use of this facility very frequently and at the very say you can call it as increased level. So in case of inventory we will have to be very careful because investment locked in the inventory is very high and we will have to think about that if this inventory is not managed properly firm can means can be under a big financial stress.

And you take about the other way around the situation in another way round that we are manufacturing and we are storing expecting that there will be a demand in the market. Lot of costs are there. Carrying cost is there, holding cost is there. Maintenance cost is there and the biggest cost in storing the finished goods inventory is of the obsolescence cost. We are manufacturing today in anticipation of the demand 3 months down the line.

But 3 months later on we saw that there is no demand for your product because of the competitors, other products in the market; change of the in the taste of the people. There is some new products or some new alternatives are available in the market. So what will happen? The adjusting inventory which is there with us that will become obsolete. So the threat of obsolescence is the very big threat or that is very big risk.

So we will have to think about that also. So in overall we would say that management of inventory is very important concept and we will have to learn all these assets management one by one but we are moving first with the inventory process and first we learn with the inventory then we will talk about the other assets. So it means finally what we want to say here.

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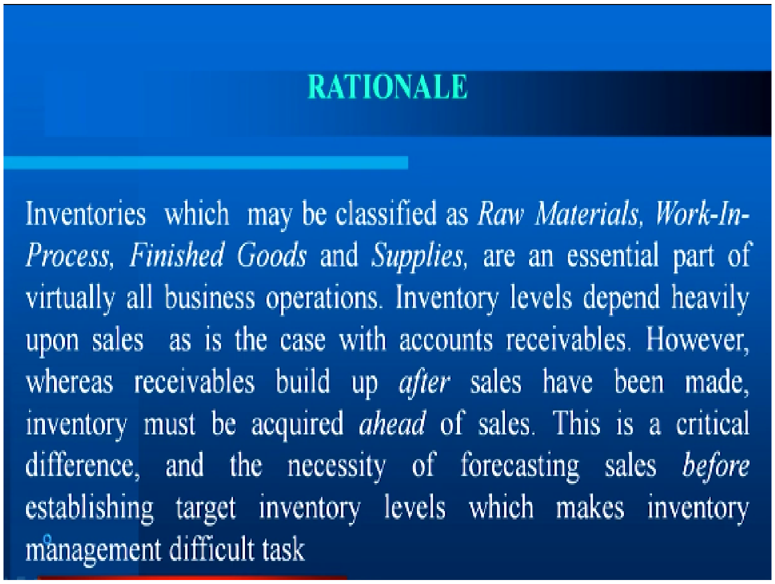

We would say here is that inventory is which may be classified as raw material, work in process, finished goods and supplies are an essential part of virtually all business operations, essential part of all business operations. You cannot avoid inventories. You have to bear the inventories. Inventory levels depend heavily upon sales as is the case with the accounts receivable. Inventory levels depend heavily upon sales as is the case with the accounts receivables.

Because if you are going to sell more in the market you would have low level of inventory because there is a inventory but it is fastly moving. If our product is selling like hot cakes in the market there is a inventory but that is fastly moving. But if there is a say lack of sales for any company's product in the market in that case what will happen? Inventory will not move. So you cannot stop the production process but here what is happening?

You are manufacturing and it is going to the warehouse. So what is happening? Your inventory is mounting. And when the inventory is mounting rather than going to the market if it is going to the warehouse it is a very pathetic situation. We should try to avoid this situation as is the so and it happens with the receivables also because when the sales are there in the market.

So we create another asset also that is accounts receivable but at that time partly we sell it on credit and partly we sell on cash. So it means that is not that bad as it is in case of inventory if you are producing but you are not able to sell it in the market at the same pace then inventory will start mounting and that mounting inventory is going to cause a big threat to the existence of the or the continuance of the firm.

However, whereas receivables built up after the sales have been made. Inventories must be acquired ahead of the sales. So they are the two means a peculiar situation. First you have to estimate how much you are going to sell in the market in the period to come. Accordingly you have to acquire the inventory. So you acquire the inventory as per the expected sales in the market but sales figure got means somewhere misplaced.

That we have exaggerated the sales or because of the availability of alternative to the people we lost the sales or whatever we expected or thought of that will happen in the market that did not happen like that in the market. So what will happen? Your acquired inventory of raw material will be converted into finished product but that finished product rather than converting it to sales or accounts receivables will be converted into the inventory of finished goods.

That is more challenging a situation. So that should not be allowed to come up in the firm. This is a critical difference and the necessity of forecasting sales before establishing target inventory levels which makes inventory management a difficult task. So sales forecasting is important. Selling finally is important and storing also depends upon the sales forecasting and our selling or sales activity in the market. So this is a continuous process.

We first follow the backward process that first we forecast the sales we are going to make. Then we come backward that we buy the raw material. Then we go for the manufacturing process. Then from the manufacturing process it goes to the market and part of the inventory goes to the warehouse and finally our objective is that the total production which we have made of the finished products that should go to the market. We expect that it should go on cash but partly when if it goes on the credit also it is a big shy of relief to the firm because finally we are able to sell it in the market.

Cash sales are cash sales but even the credit sales are also good sales and they will also be recovered at the later date but storing the inventory should not be the situation and the firm should not be compelled to store the inventories. So this is just beginning of the management of inventory process and more about it that how to manage inventory, what is the importance of managing inventory, how to go ahead about say management of inventory I will discuss with you all these things in the next class. Thank you very much.