Managerial Accounting
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Module - 9
Lecture - 20
Accounting for Costs

Dear students, in our last session we have started discussion on cost accounting. So, we have seen what is cost accounting? Then we have seen what are the objectives, advantages of cost accounting, and then we proceeded for various types of cost classifications. To take a brief recap we have seen that accounting for cost is essentially a cost accounting wherein the objective is to record the cost, to report the cost, same as financial. But, apart from that you want to do the analysis of the cost, you also want to estimate the cost; these are the additional things which are done in cost accounting.

One of the important advantages of cost accounting - it helps in cost control because every entity wants to reduce or control its cost. So, cost accounting helps us in providing the cost details; it goes into a detail analysis of cost, you know, product wise, period wise, or a factory wise cost, so that they can be properly controlled or reduced.

Secondly, it also assists in taking a variety of decisions. So, you may want to take a decision on pricing, organization may want to decide whether to make or buy, organization may want to take a call whether to use x mode of transportation or y mode of transportation, for all such decision making, cost accounting provides very valuable input of the data. So, these are the main objectives of cost accounting.

After that, we had proceeded for cost classification. Now, cost can be classified in variety of ways - one way of classifying is as per the nature or the element that is material, labor, or overheads; the other could be as per the function. So, typically the cost can be classified as factory or production cost, then admin cost, marketing cost.

Cost can be classified as direct or indirect; they can be classified as per variability. So, you look at, let us say, variable, semi variable, or fixed cost. Cost may be classified by controllability that is controllable and non-controllable and so on. So, we were at a last classification wherein we classified the cost as per the relevance.

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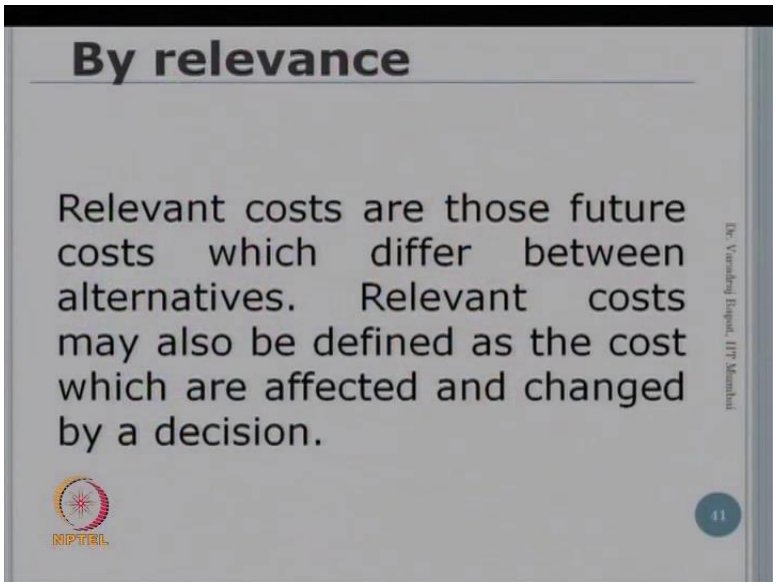

So, as per the relevance, the cost may be classified as relevant or irrelevant or sunk. Now what is a relevant cost? Here the relevance is considered from the view point of some decision. So, the cost which are going to be affected or changed by a decision will be considered as a relevant cost. And, there are other cost which are also related, but they are not actually effected by the decision, they will be sunk to a particular decision.

Now, can you give me some example? Last time we have seen this example of r and d cost for a product. But, the r and d cost for a product, though it may be for exclusively for that product becomes irrelevant for a decision on to market or not to market that product. Can you give of any other example of a relevant or irrelevant cost?

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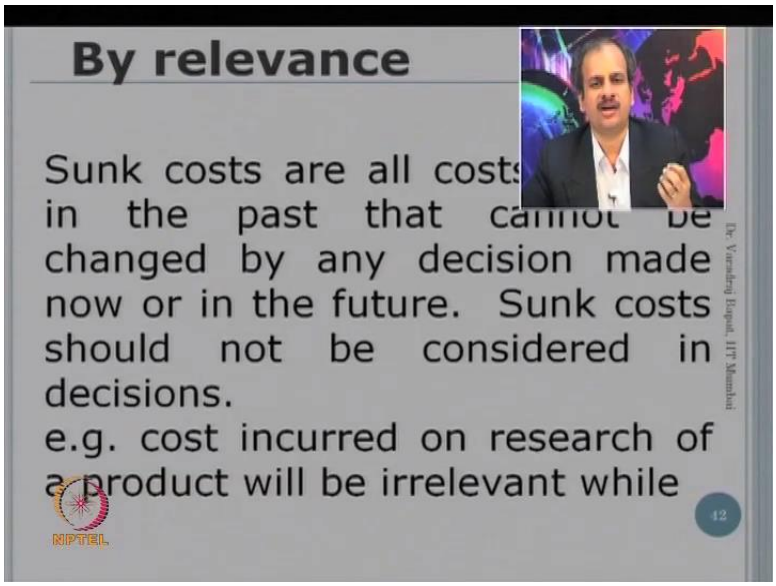

Tell me some decision and the cost, which is relevant and the cost which is not relevant? Think of some decision and in that line you can think of whether for that decision the cost is relevant or not relevant? Let us say, a customer has asked me if I can deliver my product, usually I do not deliver my product at a door step, usually customers come at my shop and take the product, let us say I am into retail business, but customer has demanded that he will give order if I give home delivery.

So, I have to decide whether home delivery should be given or no, only for that customer. So, what will be the relevant cost and what is irrelevant cost or a sunk cost? Now, let us say, if I have to deliver my product to the door step, I do not have any employees to do it, so I will have to pack it slightly in a different manner, then I may have to give it to some courier fellow who can deliver, so the relevant cost are special packing plus delivery charges, right.

And, what are the sunk costs? So, other marketing cost, advertising my admin cost, the cost of the product itself, all these are now sunk, at least for this particular decision. So, for every decision you have to logically think what is a relevant and what is a sunk; this is very important for any manager for take a good decision.

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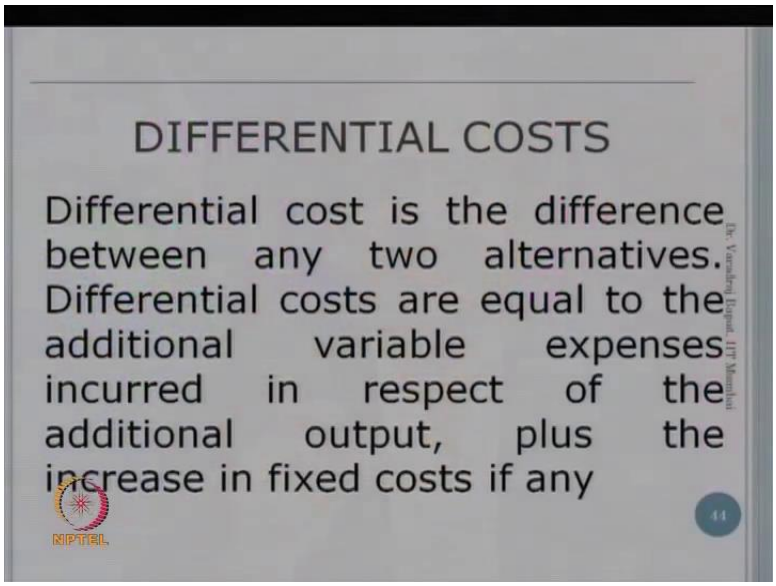

Now, a little bit of extension of sunk cost is differential cost which also we have seen last time. So, when you have 2 alternatives and taking a particular alternative involves some extra cost or a different cost that is called as a differential cost. Can you give an example of a differential cost? So, what is a differential cost?

Suppose I am running a bus and 50 percent of the bus is empty, so typically this happens with tour operator, somebody shows hands and wants to stop the bus and wants to enter, what will be the differential cost for carrying that passenger? Practically 0, because anyway bus has to run, with 1 more passenger hardly it matters. So, they take extra passenger at any money because the differential cost is not much. So, differential cost is the additional variable cost or fixed cost if any involved.

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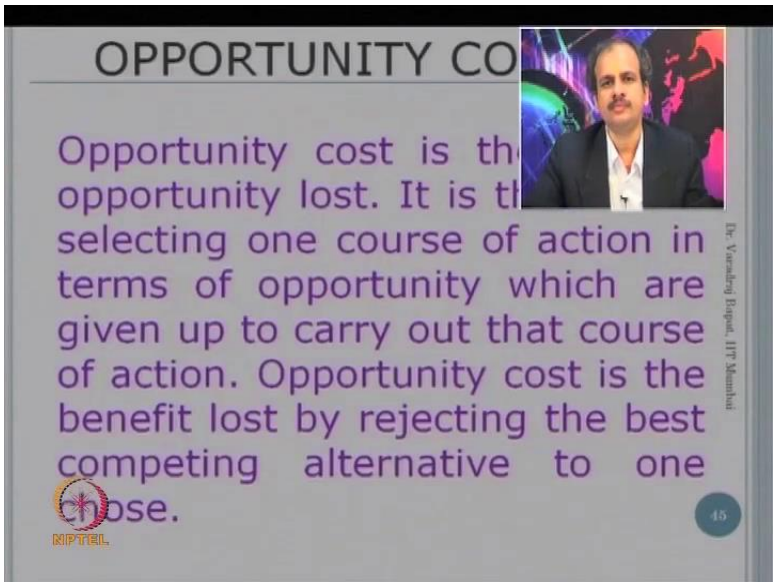

Let us go to one more that is known as opportunity cost. Now, in case of scarce resource what happens is if you use your resource for say, doing x then you cannot do y, in such case opportunity cost comes into play. So, opportunity cost, though it is called as a cost, actually it is a revenue sacrificed for not going for a particular option. So, when you choose option x, you are given up option y. So, you lose some revenue by not doing y in favor of x, and that will be the opportunity cost of that resource.

Now, can you think of any example of opportunity cost? Let us say, I have raw materials is in, particular material is in short supply; I have 100 units of the material left, I have purchased the material for 100 units which are purchased for 10 rupees each, so I have a stock of 1000 rupees.

Now, a customer comes and wants to buy the material from me for 16 rupees; I have purchased it at 10, the customer wants to buy it at 16; same material I can use in my own factory to process it into some other product, now what is the cost of that raw material for me? I will repeat my question; raw material has a purchase price of 10 rupees, it is in short supply; some customer wants to buy that from me at 16 rupees, but I can also use it in my own factory, so what is the cost of raw material for me?

Normally, it is 10 rupees because it is available in the market at 10, but in short supply it becomes 16 rupees; because I am, if I use it myself and I do not sell it to that customer actually I have lost an opportunity to sell it at 16. So, cost of raw material is no longer

10, actually it has become now 16; cost itself has not changed; cost is really speaking 10 only, but there is a opportunity component of 6 rupees making the total cost of 16.

Any other example of opportunity cost can you think of? One very peculiar example for all human beings is time because time is always at short supply. So, if you do x, naturally you have to sacrifice y. So, if you do studies you cannot do film. So, there is a opportunity cost in what? Or, if you do x job, then naturally you cannot do some other job. So, when you take some job opportunity you are losing some other job opportunity, or you may be losing opportunity to do your own business. So, there is a opportunity cost always attached to the time.

Anything which is not easily available, let us suppose, today there is no water at our home, suddenly we will be ready to pay any price for the water because now water has become a very, very important commodity, otherwise we may not be caring. Now, this is also an example of a opportunity cost because we are now ready to pay much higher price for the same resource because it is in short supply.

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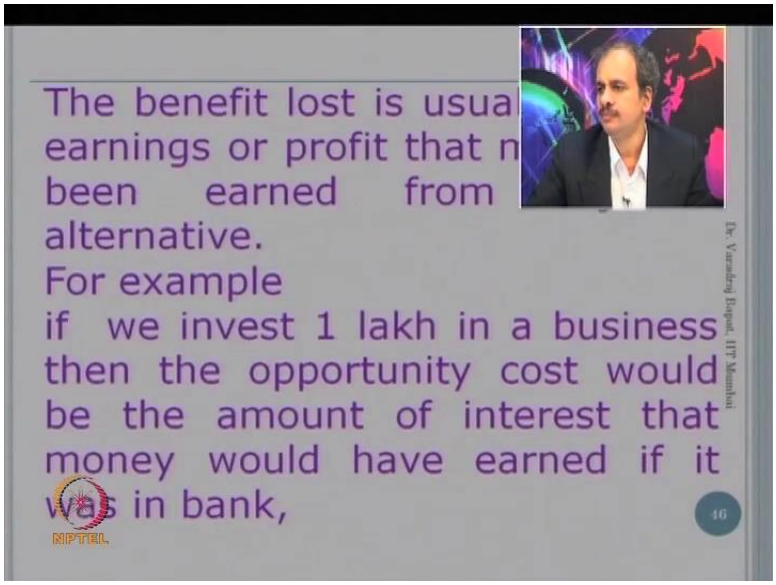

So, here one example I have given; that if we invest 1 lakh rupees in the business, our own business, so we are losing an opportunity to keep it in the bank as an FD. So, the interest on that money is lost; so at least that much we must earn from our business. So, though it is our own money, it does not mean it has come for free; it also has a opportunity cost that we are not able to earn interest on it.

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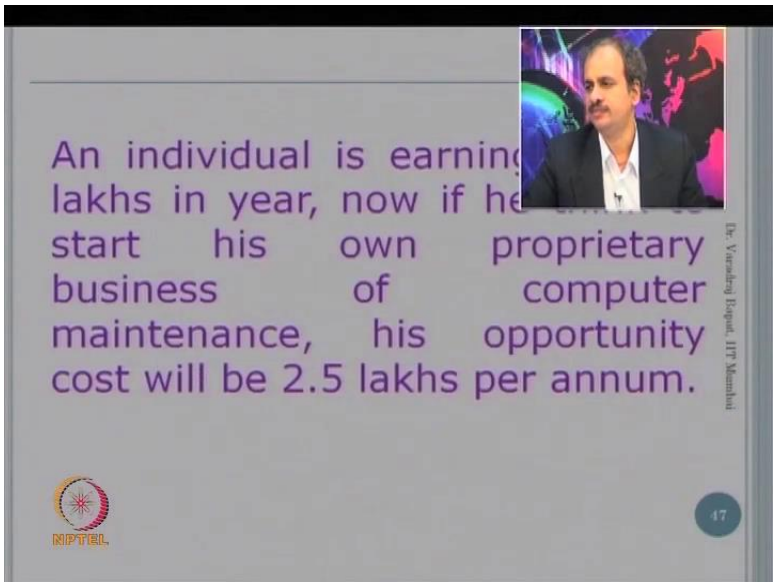

This is a example where an individual is earning some money say, 2.5 lakhs, and he decides to do his own business. So, there is a opportunity cost of 2.5 lakhs per annum for his or her time.

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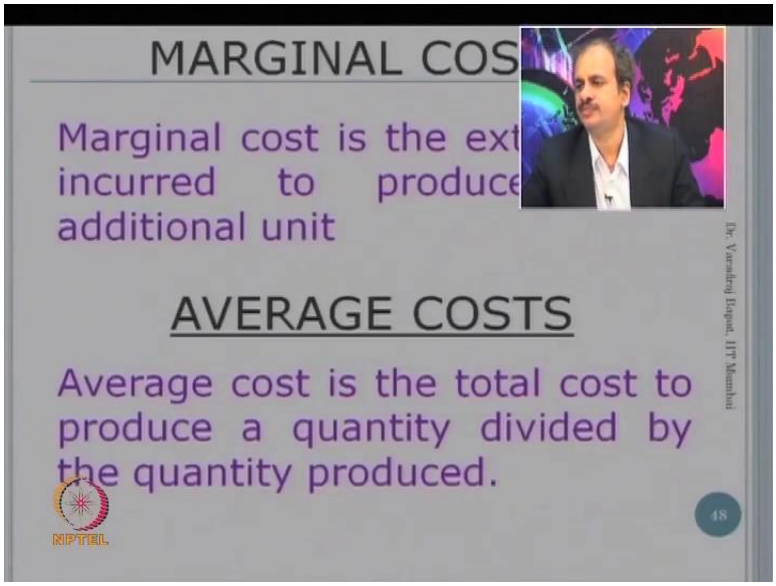

There is one more cost that is known as marginal cost. So, here, suppose you are making 1000 units, you make 1000 first unit, the extra cost which you incur for that additional unit is called as a marginal cost. Can you link it to variable and fixed cost? What will be the marginal cost, can you think of? Usually marginal cost is same as variable cost

because variable cost by definition is a cost which changes with the level of activity. Now, you have made one more unit. So, variable cost essentially will change.

So, in many scenarios, marginal cost is equal to variable cost, but not always. Sometimes what happen is, what happens is, you capacity is full you make 1 extra unit even fixed cost increases, in that case marginal cost will be variable cost plus extra fixed cost. So, by definition, anything for producing any 1 more unit or delivering 1 more unit of service what you incur is called as a marginal cost.

Then, average cost. So, average cost is very simple common sense, you take the total and divide it by number of unit, whatever you get is called as average cost.

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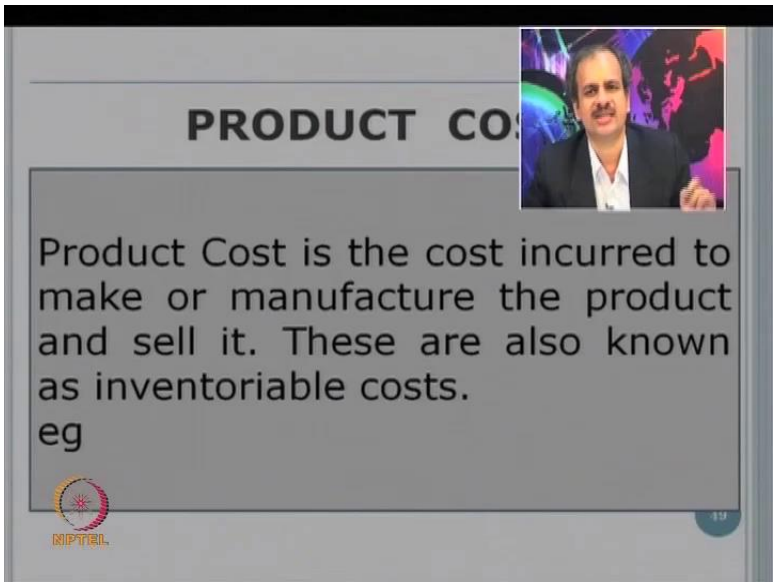

So, we will go to one more classification that is known as product cost or period cost. So, generally, all cost which you incur for a particular product which are inventoriable which get added to the value of that product are called as product costs. Can you give any examples of product costs? So, raw material definitely, that is the product cost. Let us say, I run a furniture shop, because easily for you to visualize, I make chairs, what will be the product costs? I have a small furniture factory.

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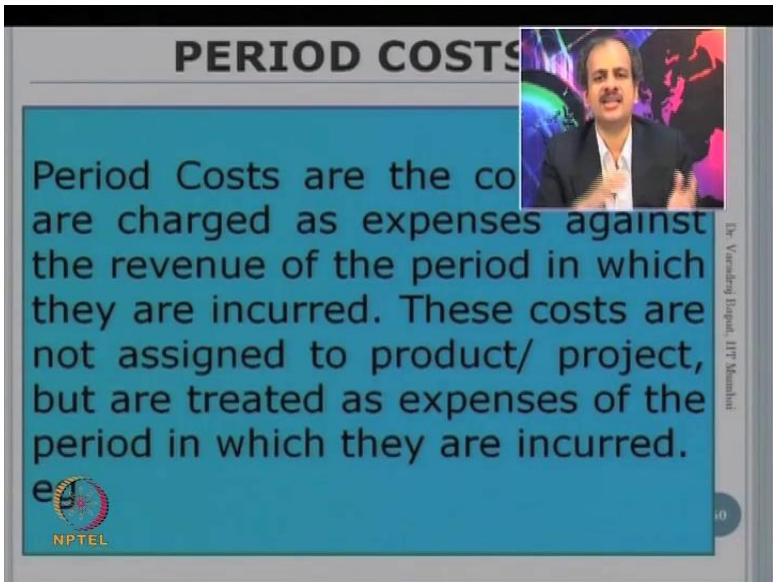

As against this, there are period costs. These are the costs which are not related to a product, they are more in expenses for a particular period. So, they are related more to time than the product; now I think you can give me a better example?

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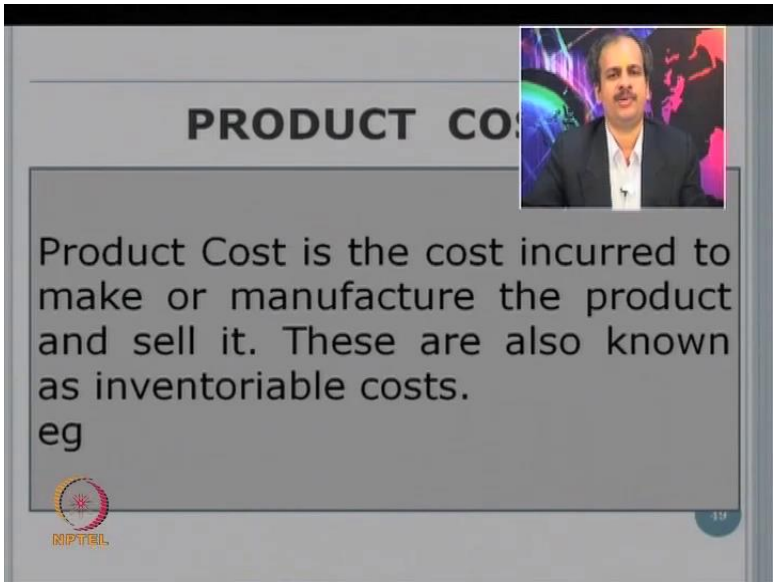

So, I have a small factory I make table chairs like wooden furniture. Now, can you tell me what will be the product costs? What will be the period costs? So, the costs of the wood which I purchased raw materials, it goes into making of product that is a product

cost. Anything else? Probably, wages or labor are paid for the work done, so that is also a product cost.

What is, what could be the non product or the period cost? Let us say, rent, depreciations of machines, management salary, marketing cost, these are all becoming period cost because they relate to a particular period. Though they are useful to make the product they cannot be directly attributable to the product.

More or less, you can say direct cost of the product are the product cost, but even the indirect cost of the product if they can be related to the product, could be considered as a product cost. But, something which is more for a particular period cannot be treated as a product cost.

Any other example can you think of? Let us say, you are a small software manufacturer; you make software by say, a small team, what will be the product cost? And, what will be the period cost? By product, of course, you can include service also; even if you are providing software service that could be a product or a service cost. So, time which your team devotes in making that product or providing that service essentially becomes product cost.

But, overall the computers which you have maintenance of those computers, depreciation, office rental, marketing, all these things are more a period cost; they do not have directly anything to do with your product. In bigger more organized setup's period cost are higher, whereas for a small setup your cost are generally minimized, most of the cost are product cost.

Having discussed about the types of costs and what the cost accounting is, now we will go into cost accumulation or to see how the cost are recorded. For cost accumulation, it is very important for us to understand the distinction of direct cost and indirect cost because that classification is mainly used for further accounting for the cost.

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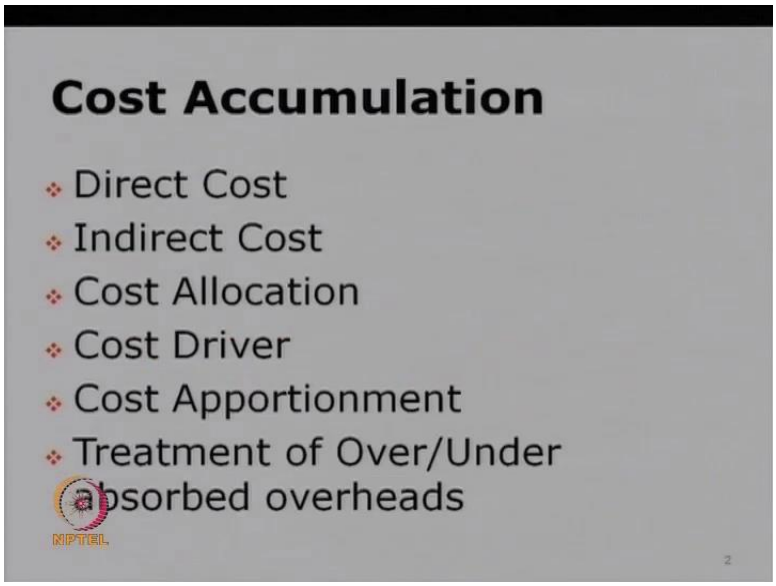

So, let us see our module 9 which is basically devoted on cost accumulation. So, these are the important issues which we are going to discuss in 9 th module where we will again see what is direct cost and indirect cost, then we will look at cost allocation, cost drivers, cost apportionment, and the treatment of over and under absorption of the cost. In short, we will see what are the steps required to be followed to record the costs in our systematic and analytical manner.

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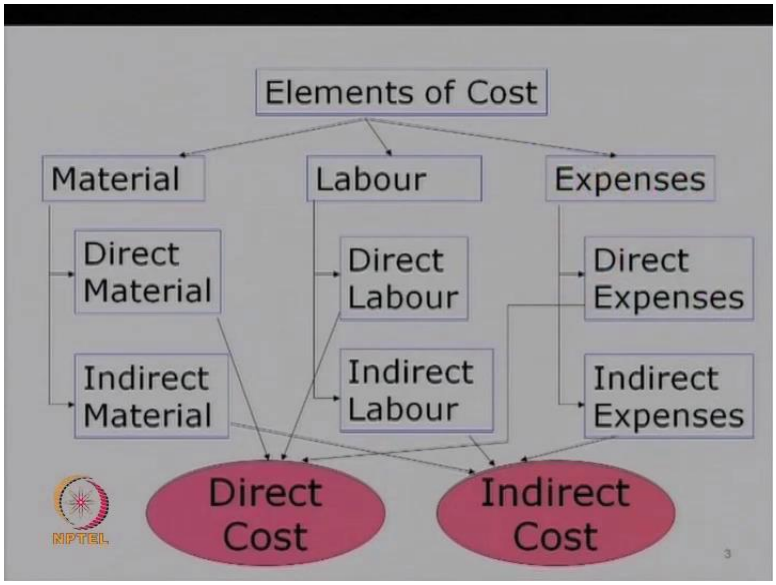

So, in the last session we have already seen the elements of cost, and also the direct and indirect cost. This chart looks at it more in detail. You can see that basically the cost are divided into 3 parts that is direct material, labor, and expenses. In turn each of these can be classified as direct and indirect. Then, all the direct costs are accumulated as one pool, and all the indirect costs are accumulated as another pool. In other words, we can say that the direct costs include both the direct material labor and also the direct expenses.

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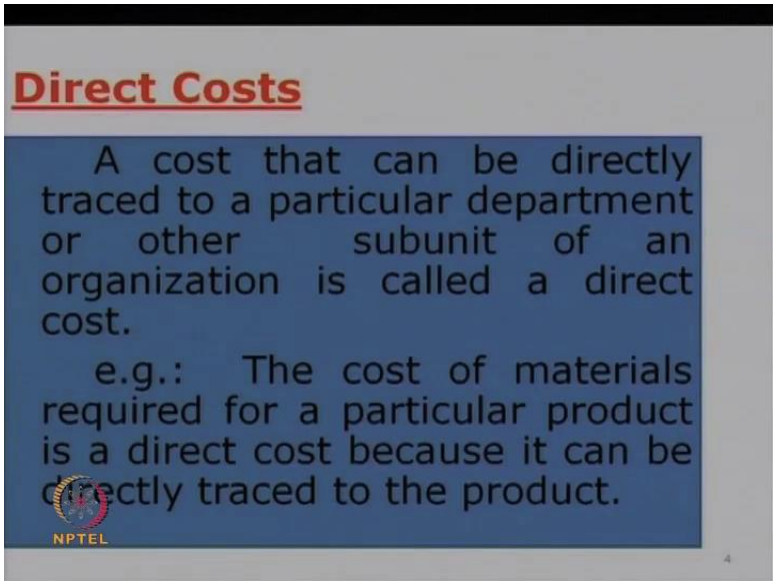

Now, let us relook at the definition of the direct costs. So, any cost which can be traced or which can be explicitly related to either a cost unit or a cost center is known as a direct cost. So, you can see the example that the cost of material which is required for a particular product is a direct cost. In other words, we can see that a particular raw material goes into making of the product; definitely we know that this is a direct cost.

Can you think of any other example of a direct cost other than raw material? Labor cost are also direct. When operators you know that are working exclusively on one particular product or in one particular cost center, those costs wages or salaries paid to those employees could be considered as a direct labor costs.

What about direct expenses? Can you think of any such example? Relatively less examples because expenses like maintainers, expenses like rate, these are more common in nature; they are indirect in nature. But, suppose, we have to pay royalty to the technology provider, and the royalties to be paid on per unit basis; so, you make 1 unit, you pay so much of royalty then that royalty becomes a direct expense.

If the royalty is paid in lump sum that you have paid 100 crores and now you produce as much as you want then it becomes a indirect cost, but when the royalty is payable on per unit basis it is a good example of a direct cost.

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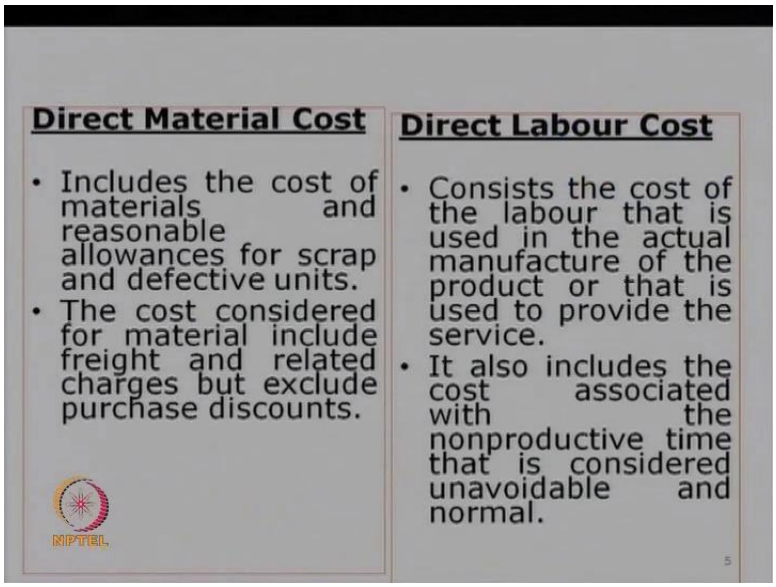

Now, let us look at these more in detail. So, you have a direct labor cost, it includes the cost of material and reasonable allowances for scrap, we have already seen it. And, the cost which is considered for material includes the cost of freight and other charges, but do not include the purchase discounts. Now, let us look at the labor, indirect labor cost; we know that the actual cost of manufacturing that item or providing that particular service.

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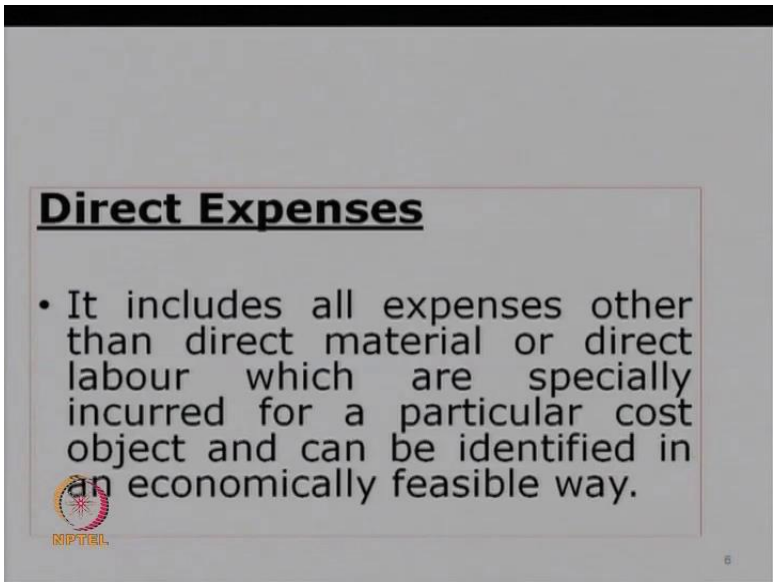

The third could be direct expenses; now, it includes all expenses that are other than direct material labor which can be particularly traced; the example of royalty we have already seen.

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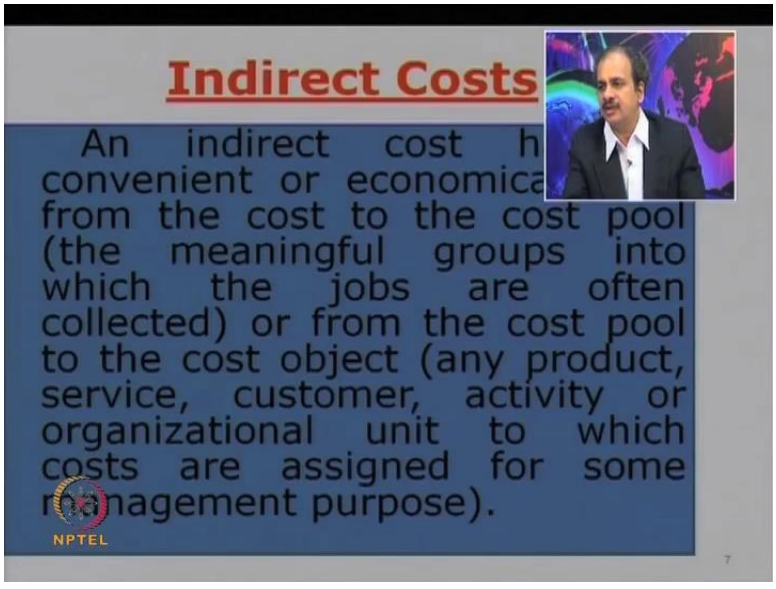

Next are indirect costs; the cost which cannot be easily linked to a particular product or a cost center; so, many of the cost which are common in nature. See, it could be possible to apportion the part of the cost to a cost center or a product, that you cannot call as a direct cost. Because, even an indirect cost can be somehow apportion to a product.

What we are saying is something which is exclusively related to a particular product or a cost center that is what is known as a direct cost. And, cost of all which are common pool which are combined, they are treated as indirect cost.

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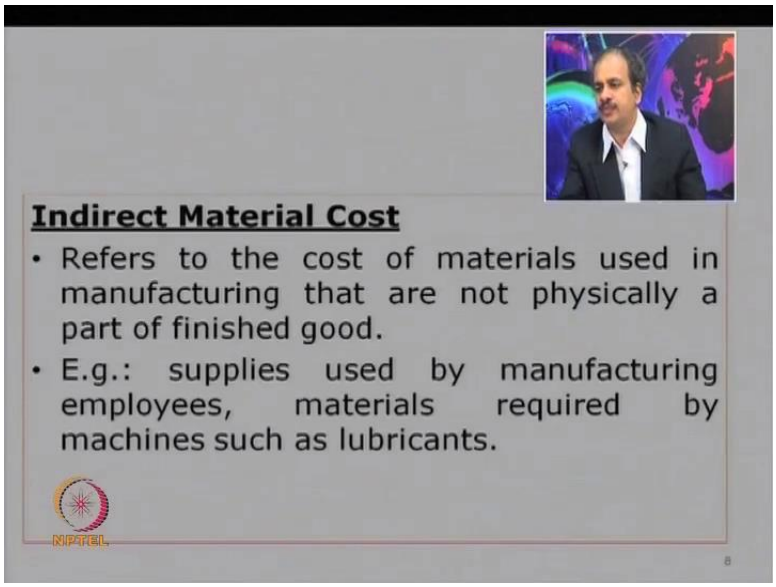

Now, let us look at indirect material. So, the material which cannot be which are generally not physically part of a finished goods. So, example going over here is supplies which are used and the materials which are required in the machine as lubricants, this could be treated as a indirect material costs.

Can you think of any other example of a indirect material costs? One example is, in the office you can use stationary; stationary is also a material, but it has nothing to do directly with the particular product. So, it could be treated as a, it must be treated rather as a indirect material costs.

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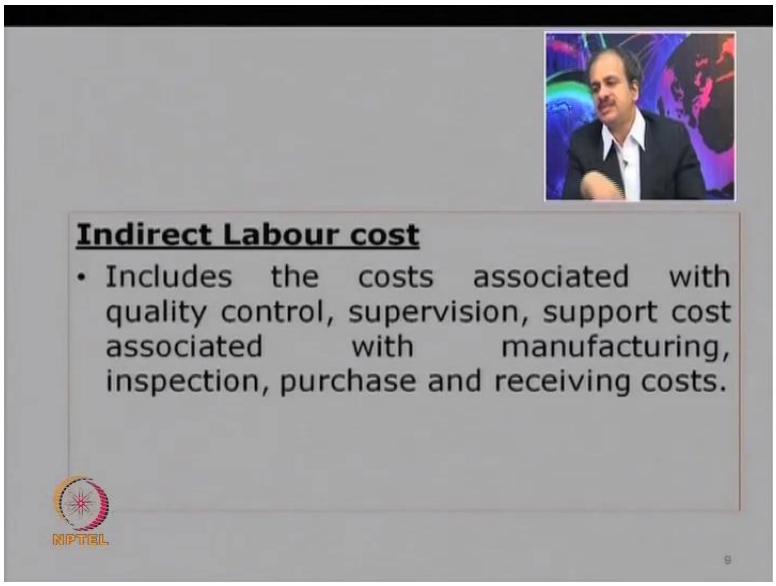

Similarly, you can have indirect labor costs. So, the cost which are common in nature; so, they could be associated with quality control, supervision, maintenance, purchasing, receiving departments, store departments, all these are indirect labor costs. Of course, you do not have to confuse that, only support services are indirect; even, a cost which is production for example, cost of let us say, a supervisor or foreman who exclusively is involved in the production, but not exclusively involved in a particular department will be indirect.

So, those workers or those helpers which work only in one department, exclusively in one department they become direct. But, there will be those categories of employees, let us say supervisor, who supervises 3 departments at the same time. So, his cost or her cost cannot be exclusively related to any one department, then that will also be an example of a indirect labor cost. So, I hope you are clear. So, it is not necessary that only non production means indirect; whatever cannot be exclusively attributable is considered as indirect.

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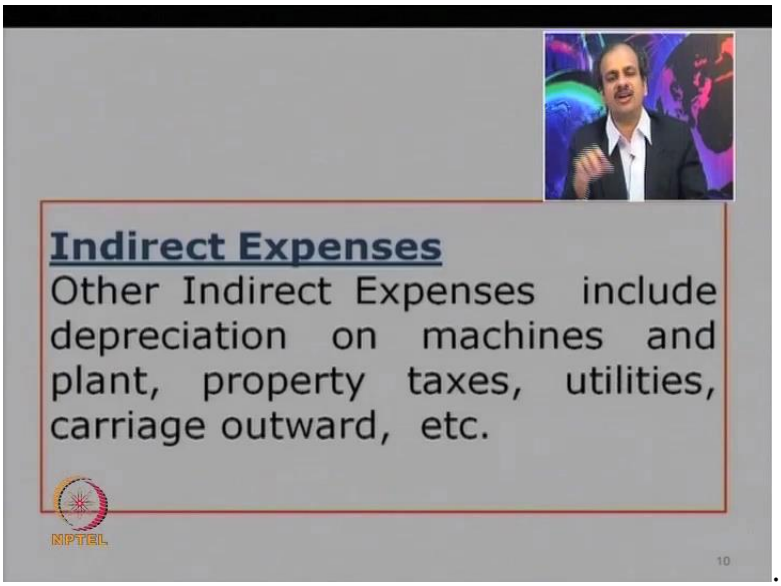

The third is indirect expenses. So, again same thing, all those expenses which are not exclusively related could be indirect. Here you have large number of examples to give. I have given a few examples like depreciation, property taxes, utility costs, carriage outward. Can you think of some more examples? I think here you can give 10 examples also easily because most of the expenses are indirect in nature.

Very tough to find a direct expense, but indirect expenses you can name many. Can you tell a few indirect expenses? Just think over? So, in a factory setup what could be a indirect cost? You have the cost of security, you may have the cost of rent, you may have the cost of canteen, cost of maintenance, all these are indirect in nature.

Even in marketing, the cost of packing a particular item will be a direct. But, other cost like advertising, like commission paid to, like the salary paid to salesman, this is all indirect expense. Commission paid to the salesman could be direct; if you know that after selling 1 item person gets so much commission it becomes a direct cost, but the salaries, perks, free samples, all these things are indirect cost. So, this is how basic classification of the cost into direct and indirect is done.

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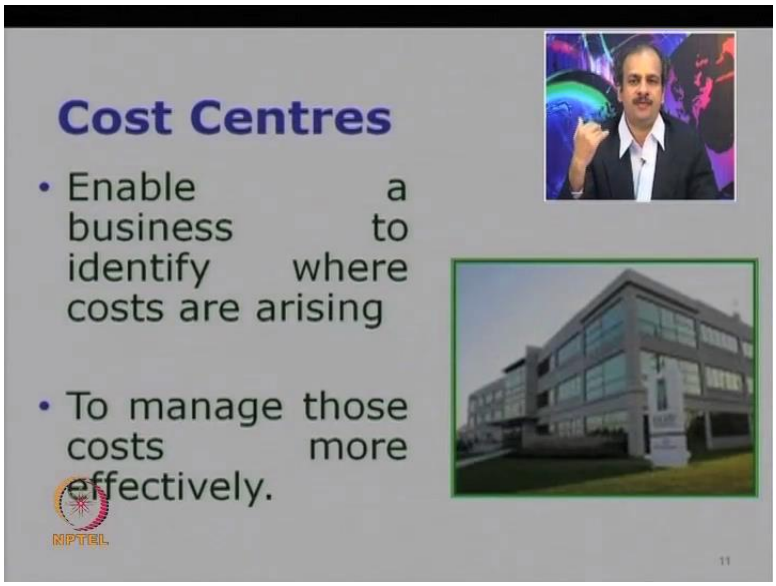

Now, we will try to understand why this is classification in this particular manner? Before going into that we will try to see, what is a cost center? When I was trying to explain the direct expense I had defined it in such a way saying that all those costs which are directly related to a product are a cost center.

So, you might be wondering, what is this cost center? So, cost center is essentially a unit of business. So, the whole business or the whole of the operations are divided into small, small parts or units, and those small, small parts are where all the costs are accumulated; such small parts or business units are known as cost centers.

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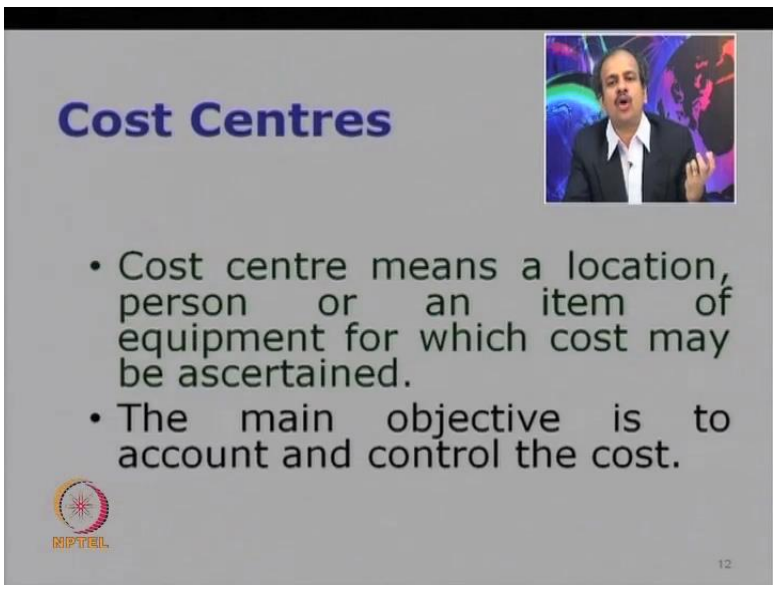

In common parlance, you may name them departments because that is a term many times used. So, the whole of the operations may be divided into small, small departments; each of those departments could be considered as a cost center. More systematic definition you can see here that it could mean a location, a person or an item of equipment for which the cost may be ascertained.

Now, the main objective is to account for and the control of cost. Now, suppose you have a, let us say, carpentry workshop, wherein you take wood and convert it into chairs and furniture; you have only 2 products to sell; you take in wood, there are 3 processes - it goes into cutting, it goes into assembling, it goes into finishing, and on the other side you get tables and chairs.

Now, what will be the cost center for you? Which could be the cost centers for you? So, if you look from a broad company point of view, perhaps you may have a production department, you might have a admin department, you might have a selling department. So, these 3 could be considered as a cost centers, but this may not be enough because this does not give you enough control on your cost.

So, what company might do is, the production department may be sub divided into 3 parts say, cutting, assembly and finishing; these 3 could be considered as cost center. And then, there were 2 products - chairs and tables, but not necessarily those products should be the cost centers because these 2 products are being processed by all the 3 cost centers, so cost center is essentially a unit of business; it need not be a product. I hope it is clear to you.

So, now, you can relook at a definition. What it says is that, it could be a location; for example, in production setup what happens is say, there is 1 room where all the cutting takes place, then the cost of those rooms may be accumulated together and that will be considered as a cost center; then it could be a person or it could be an item of equipment.

Again in a production setup, many times an item of equipment becomes a cost center. So, you have some machine that machine may be treated as a cost center, and all the cost of that machine will be accumulated together. What could a situation where person is a cost center? Can you think of that situation where person becomes a cost center, or it is not possible because our definition says location, equipment, or a person.

Every employee will get a salary, does it means the employee becomes a cost center? Rather, all people in the cutting department would together be a direct cost for a cutting

department. So, you can say that cutting department is in a particular room, so, the power consumed in that room, the salary paid to all the operators plus supervisor of that cutting department, and the raw material consumed in the cutting department, together forms a pool of cost which is direct to a cutting cost center, this is one scenario.

Now, my question is can you have a person as a cost center? I will try to take you to service industry, now, right now our example was for a manufacturing; let us say you are in software, what will happen? Perhaps, the place is not so important; not like in manufacturing that in this particular room only cutting has to take place; people may be sitting in different locations; they may be sitting at their home perhaps.

So, a team of people could be considered as a cost center. Let us say, you are 5 developers - 2 of them sit in India, 3 of them sit in US, somebody sits on client location, and all of them together are working on a particular product, then perhaps the team of 7 people could be considered as a costs center. In marketing, what happens is, many times there may be 1 manager and team of 12 salesmen; sales people move anywhere, but that manager plus 12 sales people could be considered as 1 cost center.

I hope you are now clear with all the 3 situations. So, that is why we say that it could be a location. Many times in manufacturing setup cities, typically a room or a group of room or a part of factory that is perceived as a cost center because it is practicable and it is also necessary that the cost of that particular area accumulated as a location.

So, location becomes a cost center; sometimes the machinery is big enough, so an equipment or a group of similar machines could be considered as cost center; and sometimes person or group of persons could be a cost center; and of course, the combination, any combination of this is also possible.

So, this is how you can have a variety of cost centers depending on the type of industry and also the company policy. What is more important is, all the cost of that cost center are accumulated; they are collected together. And, the cost which are directly or exclusively related to that cost center are considered as direct cost.

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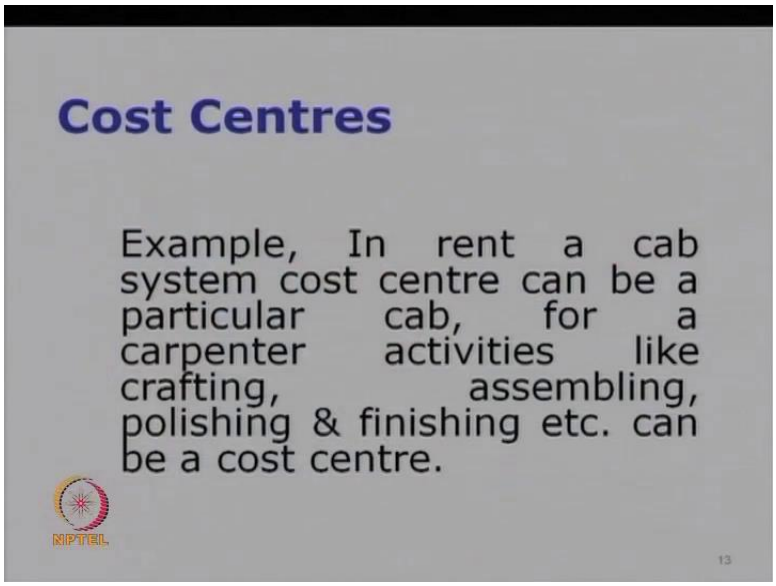

Let us also take an example of a say, car or a taxi, now what happens is suppose you are operating a rent a cab system, now what will be your cost center? So, you, your company operates let us say 100 cabs, what will be the cost center? Let us say, of these 100 cabs there are 15 luxury cabs, there are 60 let us say mid size, and there are another 35 which are small type of vehicles. So, these 3 variety of cabs are available. So, what will be the cost center?

Perhaps, it is not necessary that all 15 luxury cabs together is a cost center; each cab or a each vehicle could well be considered as a cost center, because you can accumulated the, accumulate the salary of the driver plus, fuel plus, maintenance, and link it as a direct cost to that particular vehicle. So, your vehicle is also an example of equipment. So, this is a way where equipment could be treated as a cost center.

Again, here you have a example of a carpentry shop where crafting, assembling, polishing, finishing, etcetera, could be individually considered as cost centers. So, this is the cost center, I am just repeating again and again because this concept is very important for clearly understanding what and how to account for the costs.

So, what we are going to do is all the costs now will be linked to the cost centers; whatever can be linked or whatever can be allocated, will be allocated as a direct cost; those cost which are common in nature will remain as indirect cost, and then they will also be a portion to the cost centers in the best possible manner.

So, in a way, all costs are going to be linked to the cost centers either directly or indirectly, that is why it is very important to understand what a cost center is. At the same, time keep in mind that it is not necessary that all industries or all companies should have that type of cost center only, it is for the company to decide.

Now, what will happen if the cost centers are too large? Let us say, in our carpentry shop instead of having cutting, assembly and finishing, it is decided to have only one production cost center, what will be the impact if the cost center is too large? The cost control will be hampered because we will do not know how many people are working, where they are working, what they are doing. So, if cost centers are reasonable in size it becomes easier to control them.

And, what happens if they are too small? Let us say, every carpenter is a cost center; instead of having the whole cutting department which say 10 people, we say, no, no, every person is a cost center for us, then what will happen? It will lead to a problem where most of the costs are indirect. Other than, perhaps, the salary of the carpenter, all other costs like equipment, the power consumed, etcetera, will be common in nature. So, it will be again very difficult to link it.

So, it is for the company to decide, the cost center should neither be too small nor they should be so large that there is no control. That is why looking at the accounting and control view point, company decides how to have the, form the cost centers.

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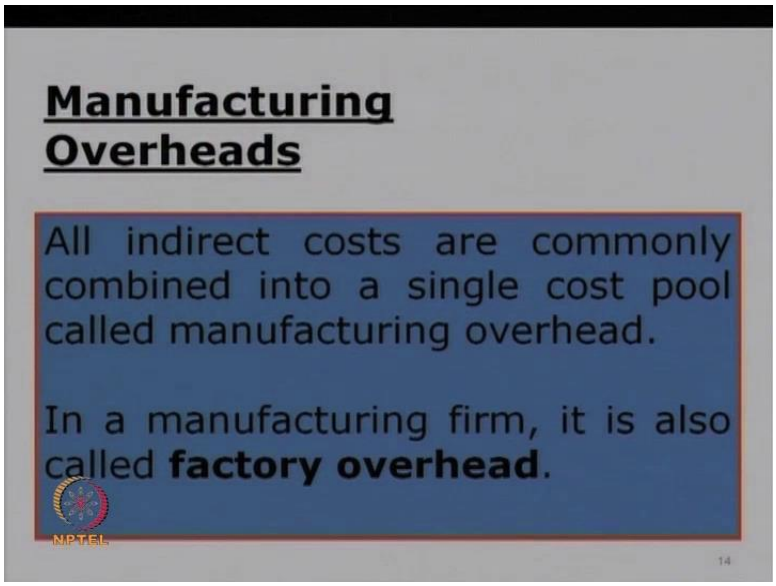

Now, let us go at manufacturing overheads. Now, all the indirect costs as we know, together are considered as overheads. In fact, over head is another name given to indirect costs. Those indirect costs may be again sub divided functionally. So, those costs which are mainly incurred for manufacturing or production are called as manufacturing overheads. Many times they are also called as factory overheads because they are common for a particular factory.

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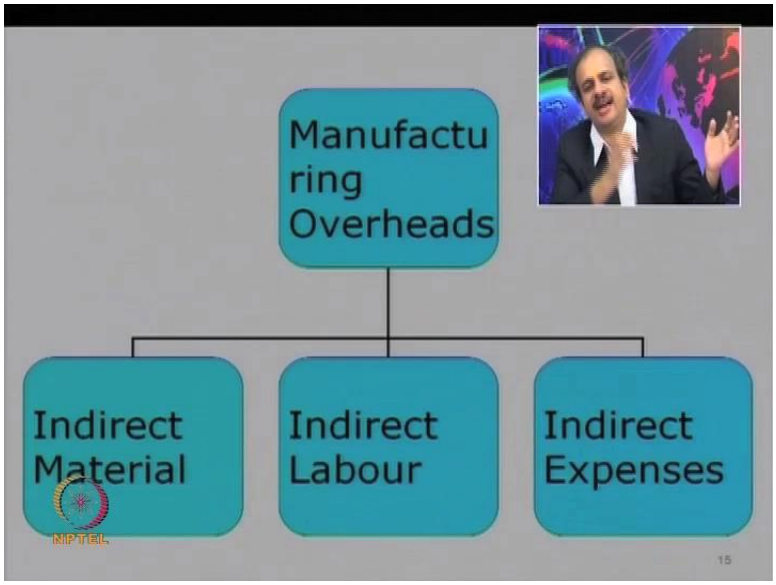

So, as you know, again manufacturing overheads can be divided as indirect labor, indirect material, labor, and indirect expenses.

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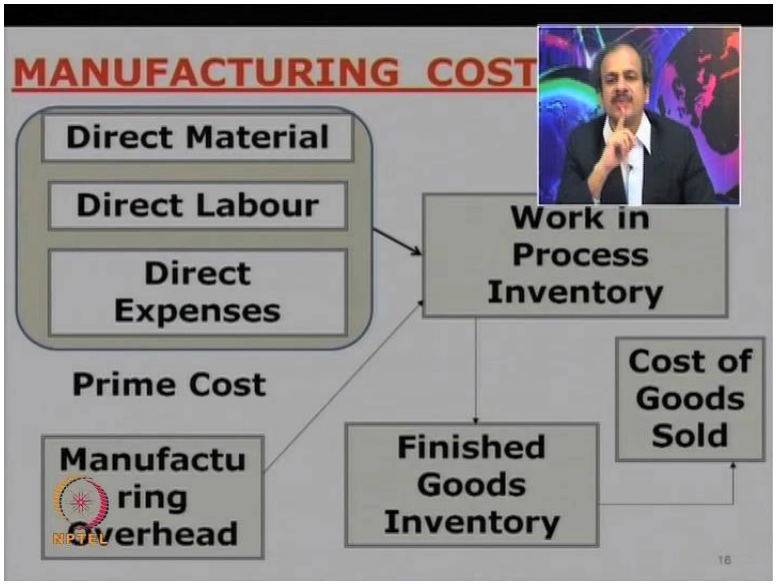

Here, flow I have tried to show for all the manufacturing cost. So, we will try to first of all categorize the cost into direct and indirect. So, all the direct cost like direct material, labor and expenses, together are charged to a particular cost center and then to a product. So, they get converted into working progress inventory, together all direct cost are also known as prime cost.

Now, on this working progress, manufacturing overheads are charged, so, we get finished goods inventory. On finished goods inventory, other cost like admin cost will be charged and that will be treated as cost of production. To this if you add marketing cost, you get cost of goods sold. This is how generally the cost chart is seen as.

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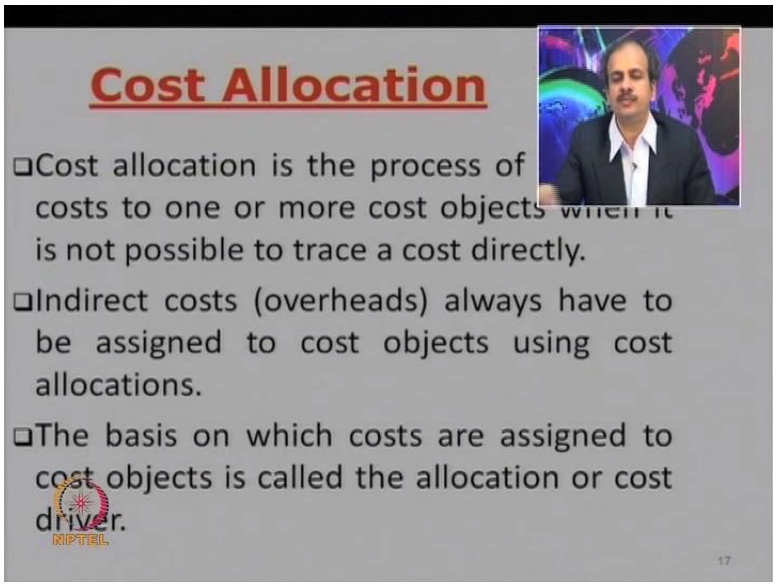

Now, let us look at the steps of accounting for the costs. So, in the beginning I tried to say that first we will list out all the cost, the next step which is very important step is categorization of those cost into direct and indirect, and that is known as cost allocation. So, every cost is required to be classified as a direct cost or as a indirect cost. All the direct cost, they are easy to handle because once identified as direct they can be traced directly to a cost center.

Now, what remains are indirect cost. Now, how will you account for indirect cost? What to do with those indirect costs? We have to identify some reasonable way in which they can be linked to a cost center. We have already discussed that every cost has to be linked to a cost center. Direct cost, there is no problem, it is exclusively related; indirect cost, we need to have some reasonable basis and those reasonable basis are known as costs drivers, in short.

We try to see some factor due to which that cost has incurred, and then depending on the consumption of that factor try to charge the cost. Can you, so, I think allocation is clear to you; allocation means direct costs are charged directly, and then indirect costs remains, and those indirect costs we use some costs drivers.

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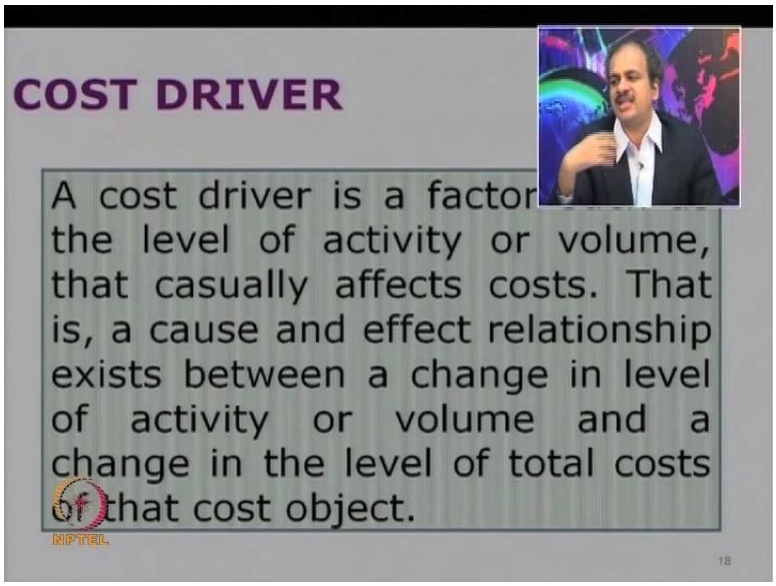

Let us look at, what is the cost driver? So, it is a factor, like say, level of activity or volume that affects the cost. So, since it is a cost of the cost, we use it to charge the cost. Can you give any example of a cost driver? Think of a cost and think of the cost driver for that cost?

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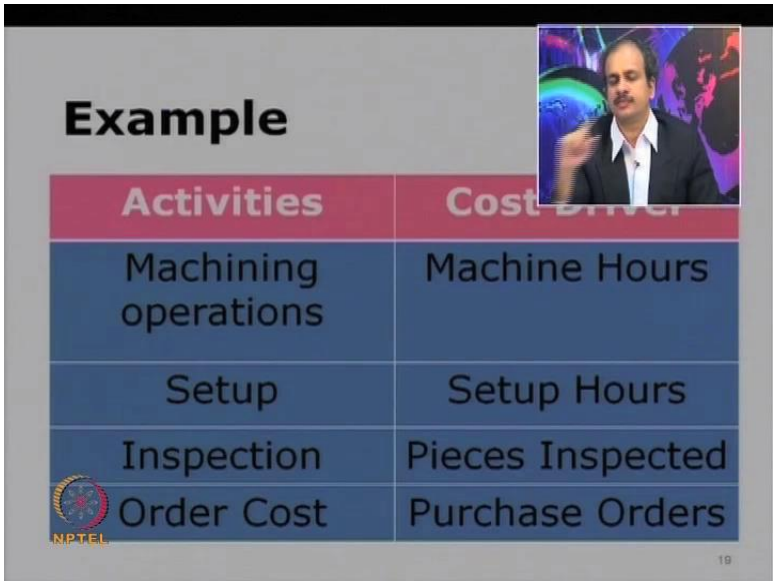

Here are some of the examples. So, let us say, the cost of machining operations. Essentially, it is related to machining hours, so we will use the machine hours to charge the machining operation costs to the cost centers. So, when you know exclusively, no

problem. But, when you do not know exclusively and you know the total cost of the machining is say 10 lakhs and total number of hours are 1000, then depending on the hours consumed by individual products we will try to charge the machining cost to the products, that is the machine hours become cost driver.

Next example you can see is setup cost. You know that initially when the machine starts, some extra power and labor is required, that is called as a setup cost. Depending on the number of setup hours, the setup cost can be charged. So, let us say, a particular product is made in small, small lots, it will require more setup cost because every time you have to set it up, make 100 units, then maybe some other product comes, then again the first product comes.

Whereas, some products may be made in bulk; so, once you start the setup, whole day you make 1000 units, then setup cost will get minimized. Then, there are inspection cost, ordering cost; depending on inspectors or number of purchase orders those cost can be charged.

Can you think of any other example of cost driver, apart from the ones which I have given here? Let us say, we are bringing in the raw material, and for bringing in the raw material we page carriage inward or the transportation cost, how will it be charged? So, if you are bringing in only one type of raw material then it is very simple because it will become a direct cost, we will simply add it to the cost of that raw material.

Sometimes what may happen is, I am in using 1 vehicle or truck, you bring in 4 types of raw materials, because you want them in small, small quantities and you do not want to send vehicle again and again, so, in 1 vehicle 4 types of raw materials have come, now how will you charge?

So, there is 1 beam for that truck or that vehicle, but 4 types of raw materials have come, so, we use a way how to look at a weight of the raw material, or you may look at the space consumed in the vehicle by that raw material; on whatever logical basis, you will charge the transportation cost to those 4 types of raw materials; are you getting?

So, what is the cost driver in this case? The weight of the raw material, or space consumed by the raw material. Same way, let us say, factory rent, it is a common pool. So, you have a common cost for the whole factory; how will you charge it to individual departments? How will you charge the rent to individual departments? Based on the space used.

So, going by our earlier example, we have a cutting, assembly, and finishing department, we will look at the space used by each of the department plus, there may be departments like storage, etcetera, so, we will charge the cost to each of the departments according to space. So, what is the cost driver for the rent cost? Depending on the square meters or whatever the unit of space you are using. So, this is how the cost can be apportioned.

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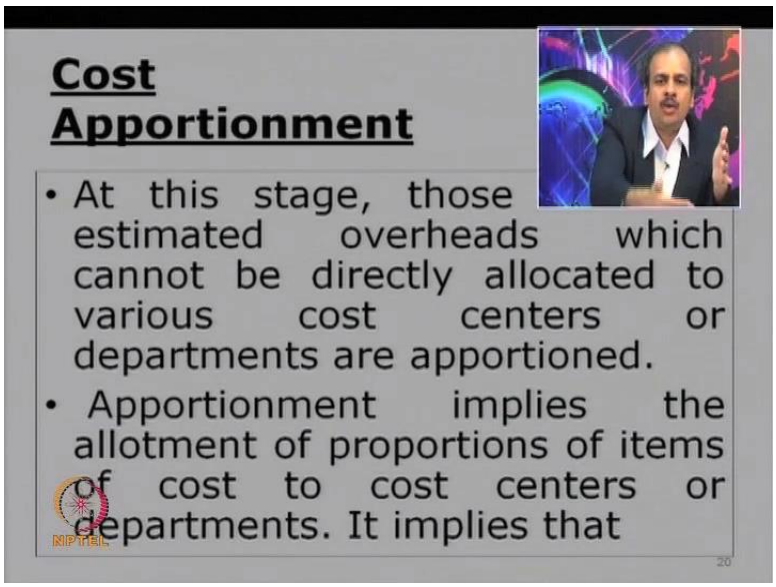

So, we will go to the next step now. I hope now the allocation is clear to you. Allocation means charging it directly. Now, what remains is required to be apportioned. So, in apportion what is being done is, depending on the most reasonable way, the common cost are charged to the cost centers or to the departments.

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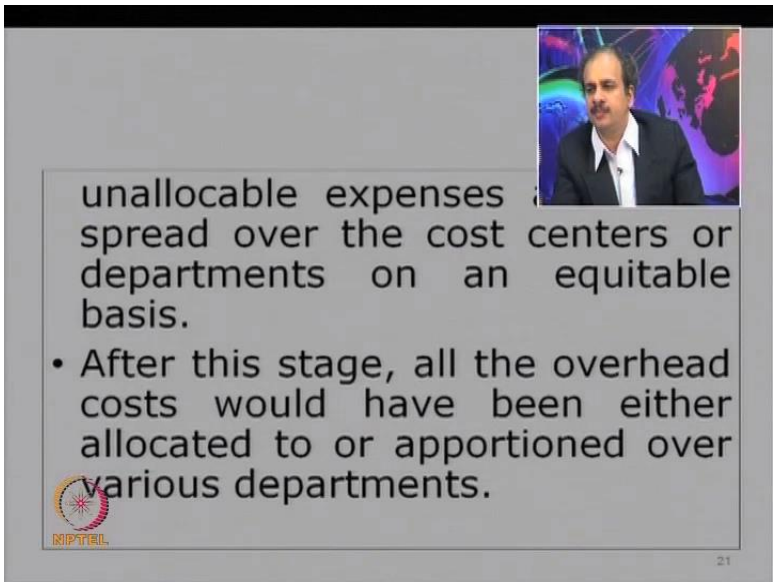

So, stage number 1 was allocation at which stage all the direct expenses got charged, indirect expenses remained; in stage number 2, all the indirect expenses are also apportioned to their respective cost centers or departments, using the reasonable basis. Stage number 3, is a stage where all the cost are now ready; they have been collected at a cost center level.

So, sometimes you may require, you may be required to reapportion. So, the cost, stage number 1 was allocation; stage number 2 was apportionment, it may involve a sub step called as reapportionment. Can you think when the reapportionment is required? Let us say, we are trying to charge the space or the rent cost based on space, how will it be charged? Depending on the area, space.

So, we have charged it to cutting, assembling, and finishing, and something is also charged to storage. Now, the problem is cutting, assembling, finishing are doing something on the product, but something like storage, canteen, or let us say, cost accounting departments, they are not working on a particular product, but some rent gets charged to them.

So, that rent is again in turn required to be reapportioned. So, whole common pool is apportioned, and sometimes again reapportioned; ultimate object is that all cost should get accumulated on the production cost centers.

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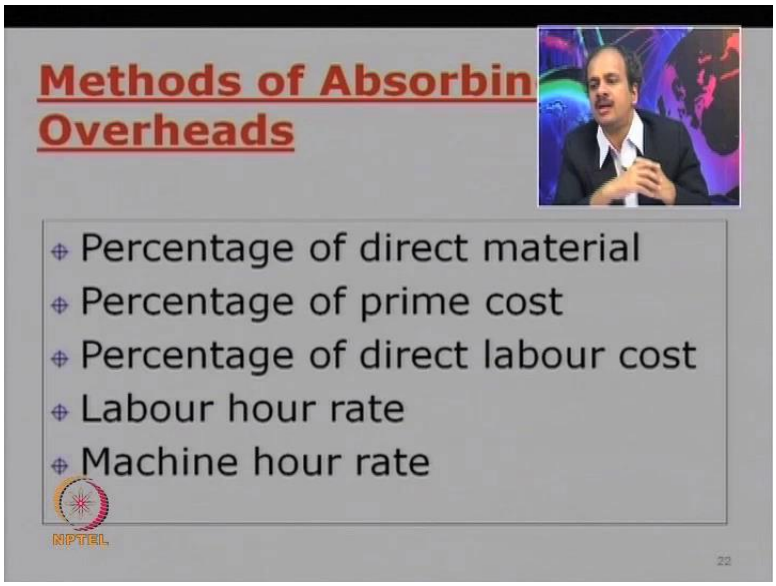

The third step is known as adsorption the step which we are looking at. So, now, our ultimate objective was to charge the cost to the cost unit or the product. So far, we have brought down the cost to the cost centers, now we are trying to link it to products. For linking them these are some of the basis used. For example, percentage of direct material, percentage of prime cost, percentage of direct labor cost, labor hour rate, machine hour rate, and so on. Are you getting me what is done?

So, the total cost at the cost center is collected. Let us say, the total cutting cost is known to us. Now we will see how much of the wood was cut for the chairs, how much was the wood cut for tables, and accordingly the cutting cost gets charged to the chairs and tables. We may use the machine hour rate as the base. So, whichever product uses more machine hours will get charged for the proportion of the time consumed by that particular product.

So, absorption is a phase where the allocated plus reallocated cost, that is the total cost of a cost center are being charged to the product. So, I hope the whole chain is clear to you. For absorption, you have any question now on the whole chain? Is it clear? So, we started with listing of the costs, then we allocated, then we apportioned, then we reapportioned, and then in the 5 th level we are going for absorption.

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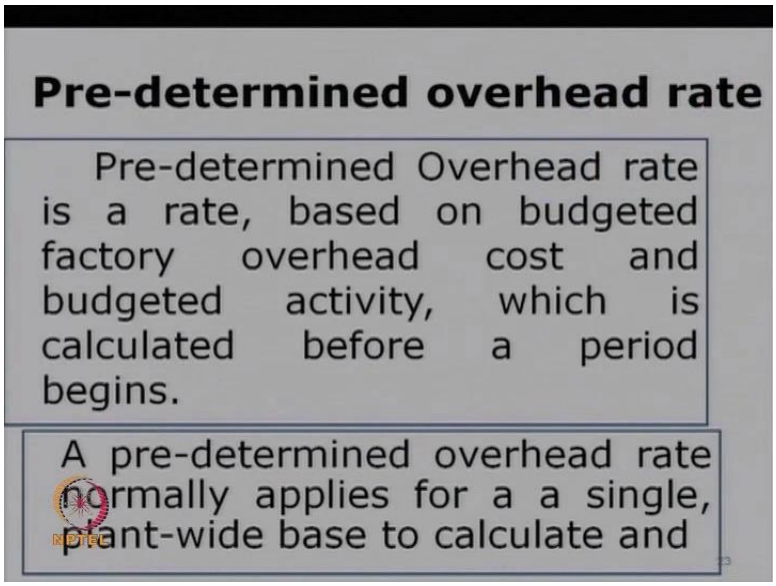

Now, in absorption generally pre-determined overhead rates are used. What is the meaning of pre-determined means, looking at the budgeted expense and the budgeted level of activity, some rate is worked out. And, as and when the production happens, the product gets charged at that particular rate.

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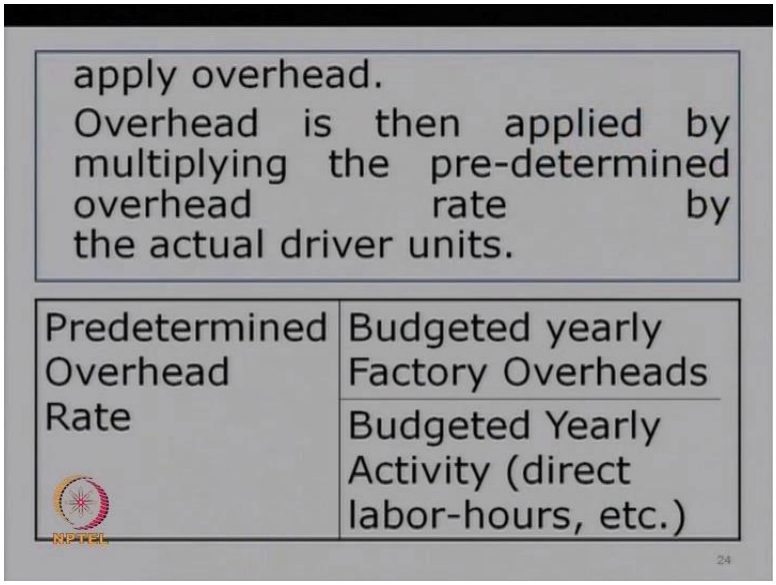

So, here is a formula for a pre-determined rate that your budgeted yearly overhead rate divided, budgeted overheads divided by, budgeted yearly activity, like say, direct labor hour, so directly machine hour; so you get the rate per hour.

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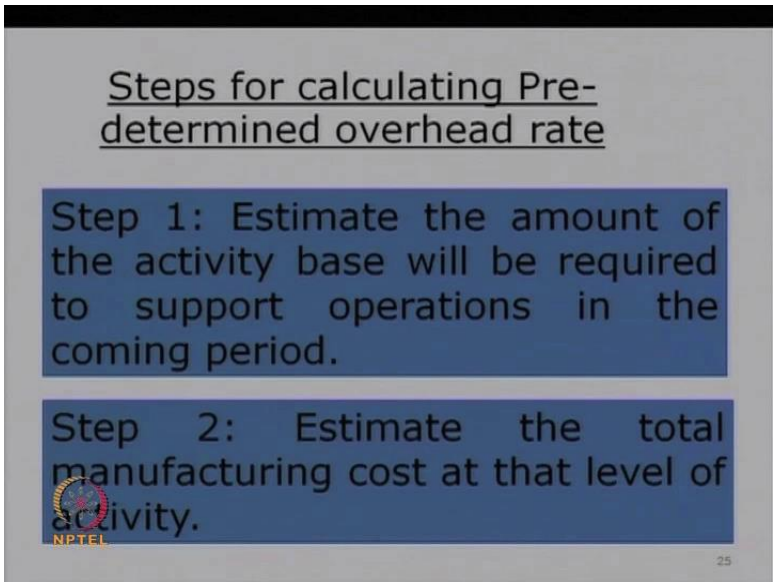

Now, what could be the purpose for having a pre-determined rate? Why do you want to have it as a pre-determined? Why do not you stop for the production, and then work out the rate? Because, manytimes we want the cost calculations in advance like, company go on to court to the customer, or immediately after the production company they want to bill the customer.

So, to collect all the expenses and also the bases it may take some time. But, production cannot stop till the accounting happens, that is why usually a pre-determined rate is calculated and then that rate is used for charging the product. Let us look at the steps. So, step number 1 says that estimate the amount, step number 2 is the estimation of the cost at that particular level.

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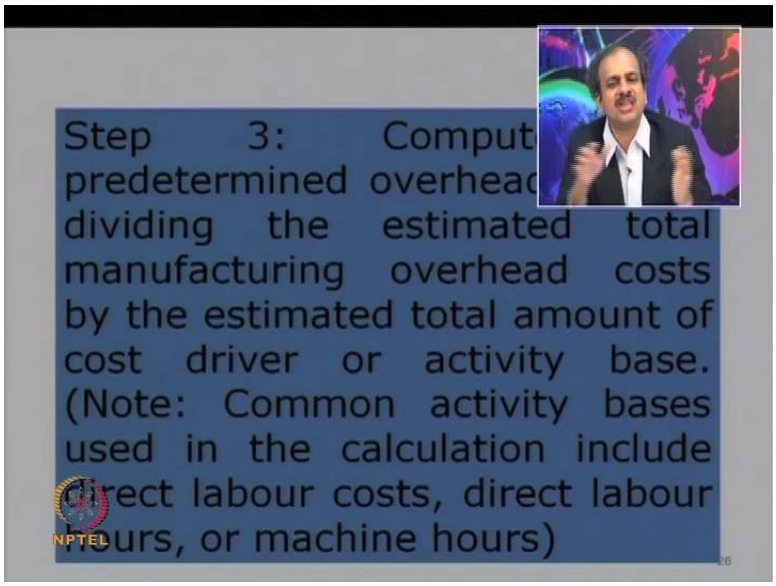

And, in step 3, the rate is computed. So, you take the total estimated cost and divide it by the base; base could be hours, base could be in terms of number of units produced, base could have been as a percentage of labor cost if you are taking then the direct labor cost could be a base. So, the total cost is, the overhead cost is essentially charged to the products using some logical basis, that is called absorption, and we typically use the system of having a pre-determined absorption rate.

So, we stop here for the day. What we have covered today is, we started with the steps that is apportionment, that is allocation, apportionment, and absorption; then we looked at what do you understand by cost center; and towards the end we have seen why do you need the pre-determined rates and how they are calculated. In the next session we will continue with the next some more steps and then we will look at the cases where how actual calculations are done. Let us stop for the day.

Thank you.