Managerial Economics
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Lecture – 4
Introduction to Managerial Economics (Contd…) - II

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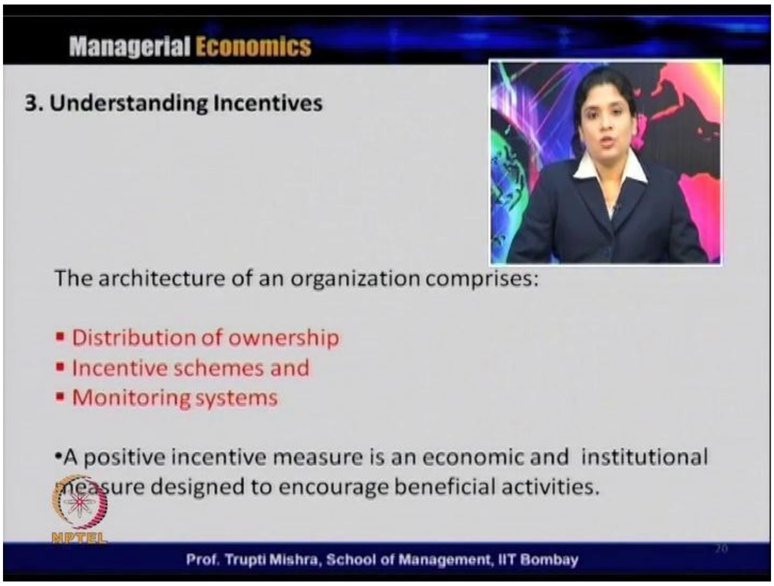

Then, we will discuss about one more concept associated with managerial economics and that is the understanding of the incentives. Basically, how incentive works and what is the role of incentive in the economy. The architecture of an organization comprises with three if you look at three pillars. One is distribution of ownership, second one is incentive scheme and third one is the monitoring system.

Our focus is on the incentive scheme. A positive incentive measure is an economical and institutional measure designed to encourage beneficial activities. Always the incentive works in a positive way. If there is incentive, may be the economic agent puts more efforts in order to reach the goal or reach the objective.

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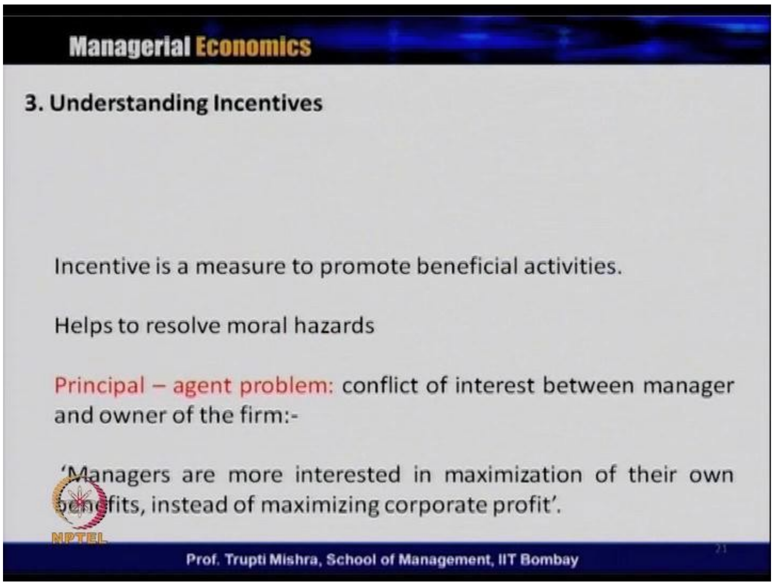

The main reason that why we are discussing incentive over here is that, even though it is promoting the beneficial activity, it also helps to resolve the moral hazards. Now, the moral hazards come from principal agent problem. Now, what is this principal agent problem? This comes from a managerial theory, which talks about conflict of interest between manager and owner of the firm. When the owner is not the manager, there is always a conflict of interest between the manager and owner of the firm. because managers are more interested in maximization of their own benefit rather than the maximization of the corporate profit or the firms benefit.

So, their activity goes in that direction. That they maximize their own benefit or maximize their own profit rather than maximizing the firms profit and that leads to conflict of interest between the manager and owner of the firm. Owners focus is always on maximization of corporate profit rather than the individual profit or the individual benefit.

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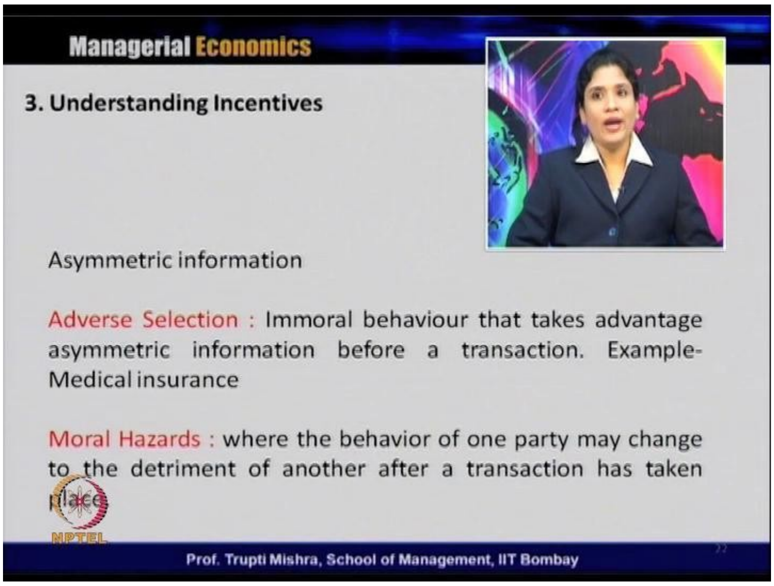

Now, why there is a, why this conflict comes? Because of asymmetric information. Now, what is asymmetric information? We take the example suppose what we generally face in the day to day life. When you are going out for a vacation, basically you always assign the task of ticket booking or hotel booking and other amenities to a tour operator.

Why a tour operator or why a travel agency because we feel that they have more information about the different facilities available and they have more information about that place and they have more information about the amenities in that place. So, they can give a better facility and a better service rather than doing it on their own.

So, in this typical case, if you look at, if you are travelling and all these ticketing and hotel bookings and bookings for other amenities are done by a travel operator, in this case you are the principal and the travel operator is the agent. In this case, the agent will try to maximize his own benefit when they are doing the action for you do or when they are doing the activity for you. Why there is a conflict of interest? The principal do not have much of information that they can do this activity on their own. The agent has the information and since they have the information, they want to maximize some profit or some benefit from their information available to them as compared to the principal.

So, if you look at it, the major reason for the principal agent problem or the conflict of interest between the manager and the owner in a specific firm case is because of asymmetric information. Because of principal agent problem or because of asymmetric information, it leads to two problems. One is adverse selection and second one is the moral hazards.

What is adverse selection? Adverse selection is the immoral behaviour that takes advantage of asymmetric information before a transaction. The typical example is medical insurance. If you look at the person who has already been affected of one kind of illness, they are more serious about taking a medical insurance rather than a healthy person. In this case, the person who has already faced the illness once, they show immoral behaviour and take advantage of the asymmetric information.

The second category or the second type of problem comes in principle agent or the asymmetric information problem is moral hazards. when the behaviour of one party may change the detriment of another after a transaction takes place. The typical example is that when the person knows that there is a health insurance associated with a job and then they join the job because they know that they are going to get the medical facility after it.

So, the difference between the adverse selection and the moral hazard is that in both the cases there is immoral behaviour. But in case of adverse selection, immoral behaviour is before a transaction and in case of moral hazards, immoral behaviour is after the transaction. So, this medical insurance example, we can take in both these cases, one case where the affected person is more serious about the medical insurance than the healthy person. The second, the moral hazard, the typical who has got the job or the person who has the offer for the job, they join the job knowing that there is a health insurance and they will get a medical benefit once they join the job.

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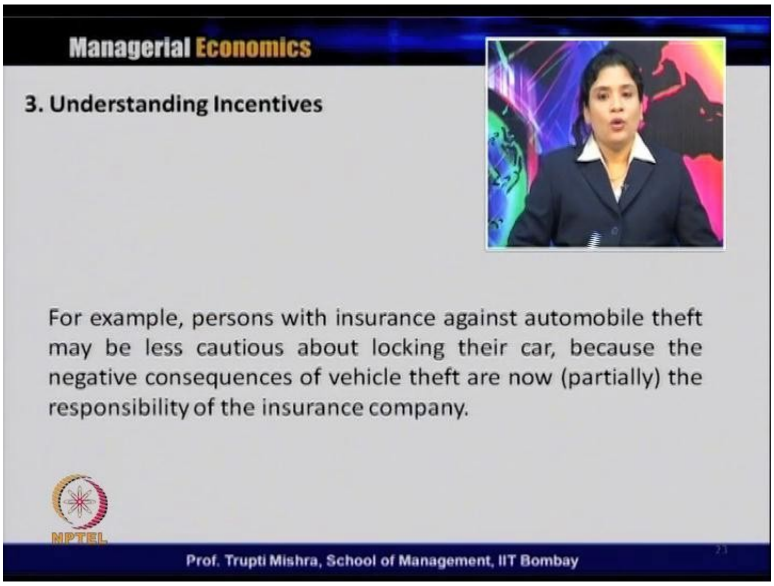

You can take one more example under moral hazards, which may be general in nature. For example, the person with insurance against the automobile theft may be less conscious about locking their car, because the negative consequence of vehicle theft are at least partially the responsibility of the insurance company.

Your vehicle is insured, so you are less careful or you are less conscious about locking the car, because you know if something goes wrong with your car, may be sometimes the insurance company pays the entire amount and sometimes its partial amount. So, the risk gets shared between another party and that is the reason you are showing immoral behaviour. If there is no insurance, may be the person will be more careful for the security of their vehicle or security of their car. But since there is insurance and there is a third party paying for it, they are less careful and they are showing immoral behaviour. This is a typical example of moral hazards that generally comes from the principal agent problem or that generally comes from the asymmetric information.

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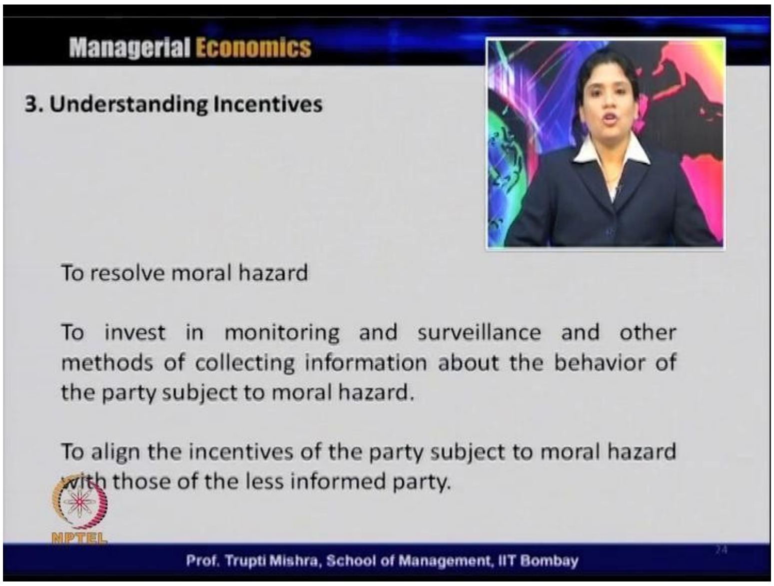

Now, to resolve the moral hazards, incentives comes into picture. Now, what are the two ways for solving these moral hazards? The two general approaches or the two general solutions are, one is to invest in monitoring and surveillance and other method is collecting information about the behaviour of the party subject to moral hazards.

Monitoring those economic agents whose showing immoral behaviour or information about the behaviour of the party and second is to align the incentive of the parties subject to moral hazard with those of the less informed party. So, if there is an incentive associated with that, may be the immoral behaviour is less. So, the first one is monitoring the immoral behaviour and second one is that there is an incentive or to align the incentive of the parties subject to moral hazard with those of the less informed party.

So, if you are showing less immoral behaviour, there is an incentive associated with this. So, one is monitoring and second one is the benefit of the incentive with not showing the moral behaviour.

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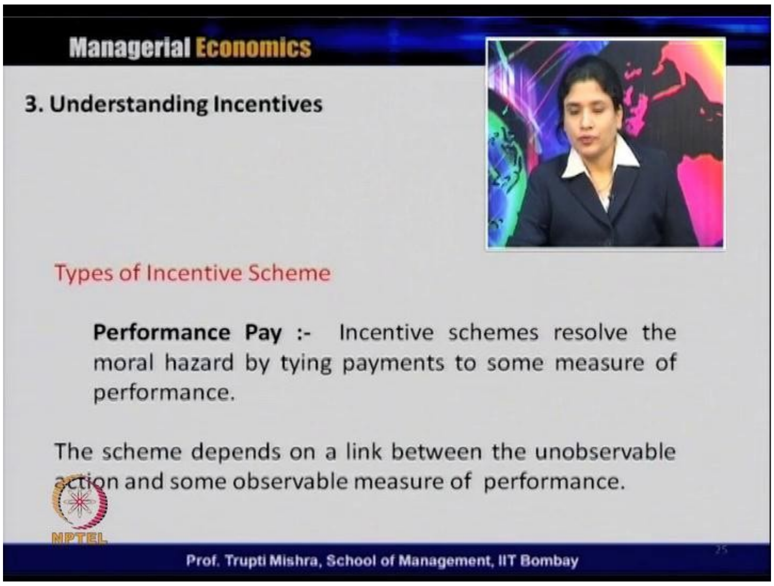

For this, there are types of incentive schemes. One is performance pay. In case of performance pay, the incentive schemes resolve the moral hazards by tying payments to some measure of performance. If you look at hoe the insurance charges for your vehicle, every year it differs. If you have met with an accident, or if you have met with a theft, generally the insurance premium increases. If no eventuality happens in the last one year, generally the insurance premiums are less.

So, this is one-way act is the incentive scheme to resolve the moral hazards by tying payments to some measure of performance. So, this is the incentive because there is no immoral behaviour in the last one year, you are paying less insurance premium in this typical one year. So, this scheme depends on a link between the unobservable action and some observable measure of performance. Your action is not observable, but if you are not showing immoral behaviour, there is always an incentive link to that. There is always a benefit link to them.

The second one is performance quota. There is a minimum standard of performance, below which a worker is subject to penalty. The penalty could include deferral of promotion, reduction in pay or even dismissal.

Let us take an example of the salesman. In the previous case, in case of performance pay, if you are taking the example of a salesman, how it works. You can talk about two scenarios over here. You are giving 50 rupees to a salesman for the day. The salesman knows that if he is selling 1 unit, 10 units, 15 units, 20 units, or 100 units, he is going to get 50 rupees and not more than that. It is a fixed pay associated with that and there is no incentive for him to show a moral behaviour and put more effort, so that the sales will increase and even his own personal benefit will increase.

So, there is no performance pay and that is a fixed pay. The second scenario is the salesman gets 2 rupees for each unit what he is selling. Now, in this case, how it works, the more he sells the more benefit he is getting. So, this is the way there is time payments to some measure of performance. This is a typical example of performance pay, where the economic agent has to put more effort in order to get more benefit.

So, in one way this works out well for the firm and also for the salesman. They sell more and they get more benefit and they get more incentive. If they sell less, they are getting less profit and less incentive. For the firms, how it works is that, if they are paying more for each unit they sell, the salesman would always try to sell more, which will also increase the sales revenue of the firm.

So, this second scenario is the example of the performance pay, where performance is associated with each unit of the activity. There is a monetary payment for each unit of the activity and this works well for the economic agent, whether the economic agent as a salesman or whether the economic agent as the firm.

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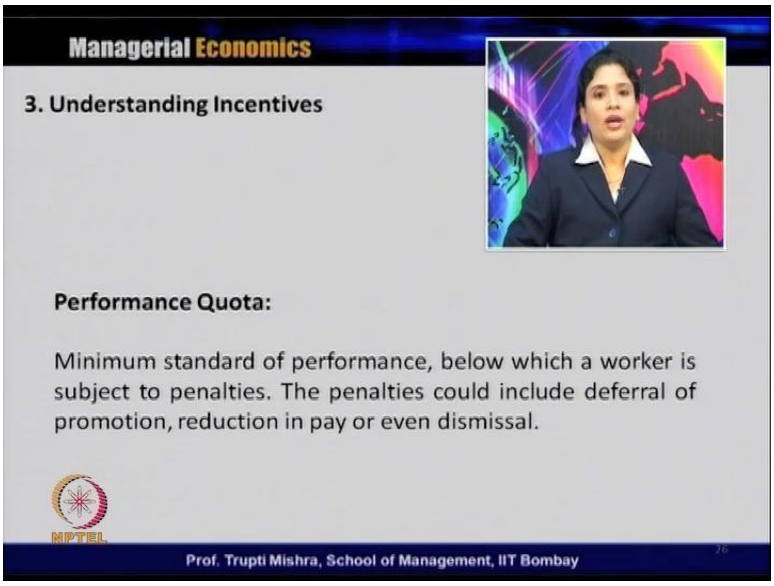

Then, we will talk about the performance quota. Suppose there is a firm, which is having 10 salesmen. What is performance quota? There is a quota identified by the firm. Suppose everyday they have to at least sell 10 units of the goods. Now, what is the incentive for the salesman? By any means, at least they have to sell 10 units of the goods. If they are not doing that, there is a penalty associated with that.

Now, what is the penalty? May be, it will come as a deferral of promotion, because they are not meeting the deadlines and they are not meeting the targets. If they are not reaching the quota for a longer period of time, sometimes the reduction in pay or even dismissal may come as a penalty because they are not able to perform their job properly.

Now, how it will work as an incentive? If the quota is 10 units, and if they are selling anything above that, if a sales man is selling anything above that there is an incentive associated with that. This will work positively for both the firm and the salesman. How it works positively for the salesman? After meeting the quota, they will try to sell more because with each unit, they are getting more and more benefit. So, quota is the minimum standard of performance, above which they are getting the incentive and below which, they will be subject to penalty.

So, in this case, the incentive is to sell more than the quota and get the incentive. And this will also lead to the reduction of the immoral behaviour by the salesman, where they will feel that after reaching the quota there is nothing. But if there is an incentive after reaching the quota, they will work for selling more which works positively for the firm because it also increase the sales revenue of the firm.

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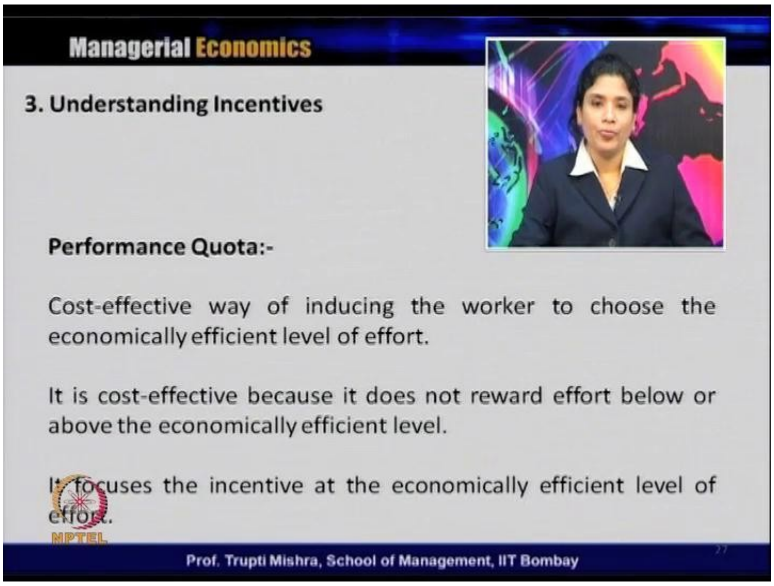

This is a cost effective way of inducing the workers to choose the economically efficient level of effort. It is cost effective, because it does not reward effort below or above the economically efficient level. It focuses the incentive at the economically efficient level of effort.

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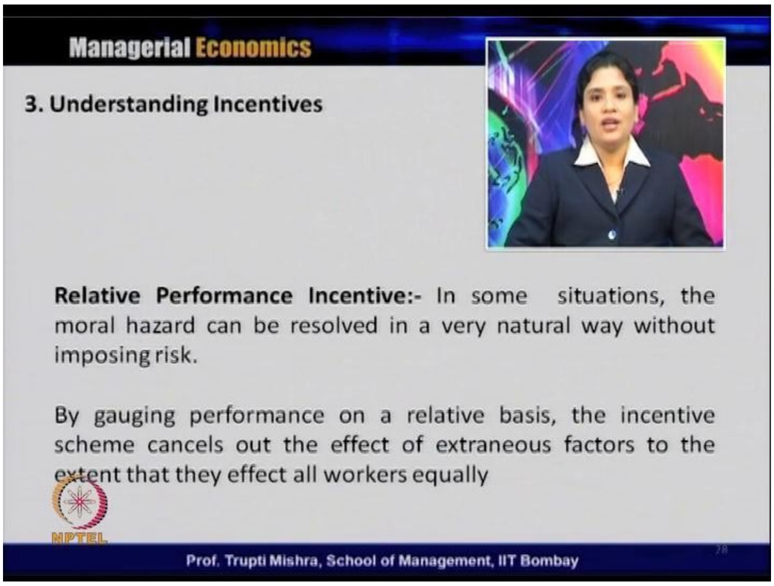

The third one is relative performance incentive. In some situations, the moral hazard can be resolved in a very natural way without imposing risk. By gauging the performance on a relative basis, the incentive scheme cancels out the effect of extraneous factors to the extent that they affect all workers equally.

So, in this case if you look at, there is average performance will be decided by the firm. Now, what is the average performance? They will take the performance of all the salesmen in a typical time period and they will find out the average performance. If any workers it is doing more than the average performance, then they are getting incentive. If they are not doing more than that, they are just getting whatever is the regular payment associated with their job.

In this case, there is some extraneous factor which may affect the worker that goes out because we are taking the average performance of all the salesmen. And this works well because in this case, it is not an absolute performance rather it is a relative performance of all the economic agents or in a specific case, all the salesmen they are working for the firm.

So in incentive, there are three types of incentives. One is performance pay that is per unit incentive for the pay. Second one is performance quota. They have to meet the quota. If they are meeting the quota above then they are getting an incentive. If they are not meeting the quota, if they are below the quota then they are getting a penalty. Third one is the relative performance incentive. Which say that if you look at the performance of all the economic agents is taken in an average level and no extraneous factor is influencing the economic agents or influencing the salesman.

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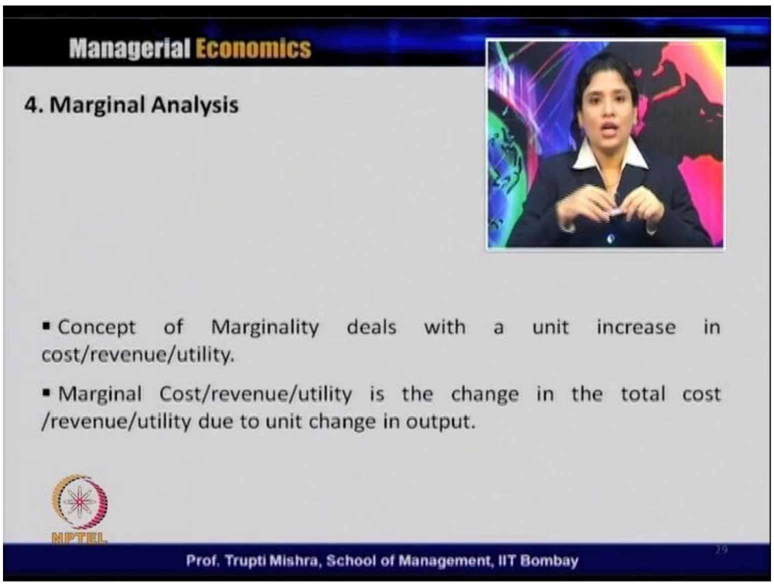

Then, we will come to an economic concept that is marginal analysis. This is more crucial because if you look in managerial economics theory, this marginal analysis comes for our each type of analysis or each type of application. Now, what is marginal analysis? This deals with a unit increase in the cost, revenue or utility. Suppose the variable is cost or suppose the variable is revenue or suppose the variable is utility. The concept of marginality deals with a unit increase in the cost, revenue or utility.

Now, what is marginal? Marginal cost or marginal revenue or marginal utility is the change in the total cost revenue utility due to unit change in the output. So basically, the marginal is the concept of marginality is the unit increase or unit change in any variable that is cost, revenue or utility.

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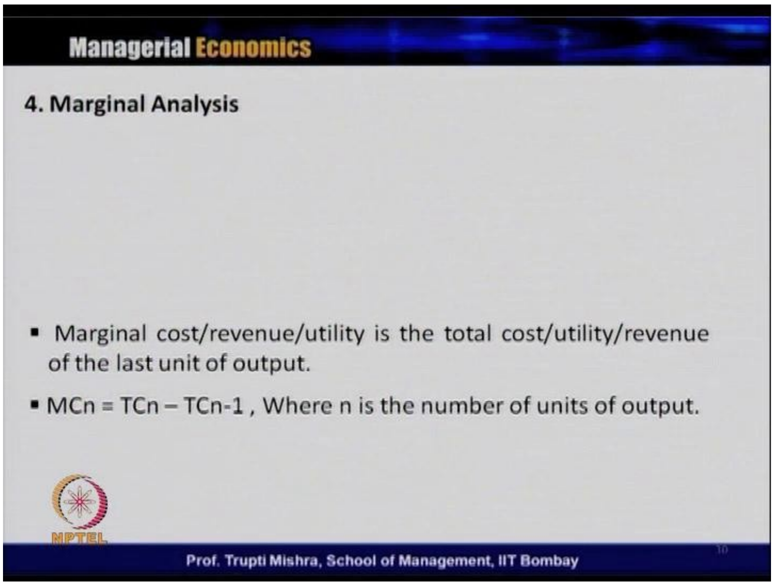

So, marginal cost, revenue, utility is the total cost, utility, revenue of the last unit of output. So, if you are taking a typical case of marginal cost, that is marginal cost of what is the n unit, that is the total cost of n unit that is total cost of n minus 1 unit, where n is the number of units of output. So, marginal cost is nothing but the cost associated or the difference in the cost between n unit and the n minus 1 unit. That is the marginal cost. So, the marginal cost is the cost as total cost of the last unit of output, and that is the marginal cost of the present unit.

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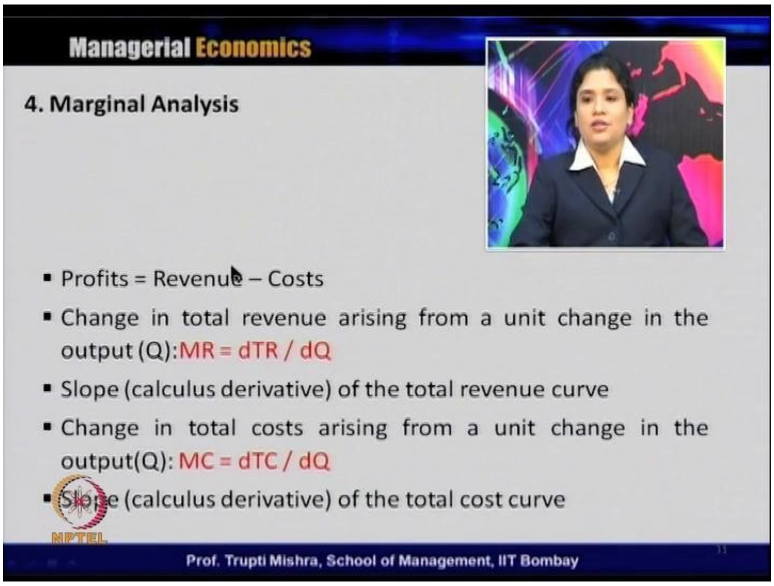

As we know, profit is the revenue minus cost. So, change in the total revenue arising from a unit change in the output that is marginal revenue. That is If you are discussing in terms of calculus, in terms of the derivative, then this is the first order derivative of the total revenue function with respect to the output.

So, profit is revenue minus cost. Now, any change in the total revenue arising from a unit change in the output is marginal revenue and marginal revenue is the derivative. That is, the first order derivative of total revenue with respect to total output. So, the slope or the calculus derivative of the total revenue curve that gives us the marginal revenue curve. So geometrically, the slope of the total revenue curve gives us the marginal revenue curve.

Similarly, what is the change in the total cost? Whatever is the change in the total cost arising from a unit change in the output, that is the marginal cost. So, one unit change in the output, whatever the cost incurs that becomes the marginal cost. Geometrically, if you are trying to find out the marginal cost, this is the slope of the total cost curve.

So, there are three ways to represent this marginal. One, where this is just the per unit change in the output or the last, whatever the revenue cost associated with the last unit of output. Second, mathematically how we can find out the cost between the, the difference in the total cost between the last unit and the present unit and geometrically, how we can get this marginal cost and marginal revenue. The slope of the total revenue curves gives us the marginal revenue curve and the slope of the total cost curve gives us the marginal cost curve.

So, in the next class, we will discuss more about the marginal analysis and incremental analysis. This is the reference for whatever is being followed for this typical session.

Thank you.