Project Management for Managers

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Lecture - 06
Types of Projects and Project Life Cycle

Hello friends. I welcome you all in this session. In this session, we are going to talk about different types of projects which are available and we will also try to see what project life cycle is. So, let us get started.

Though in previous session, we did discuss little bit about different types of projects, I will recall some of the types of projects and then, we will further go in details. So, as I said you can have personal projects, you can have national projects, international projects, local projects, you can have industrial and non-industrial projects. Projects can be on the basis of partnership whether it is a joint project or it is a single project.

So, you can have different types of project on the basis of partnership. So, you can have private limited company type of projects, you can have let say some other type of project, you can also have national and international type of projects. So, let say this is example of some project which is very much type of international project and quite a technical project. So, you can have project classification on the basis of high tech and low tech. Also, let us look at how to classify projects based on durations. So, you can have long term project, you can a medium term project and you can have short term project. Based on investment, you can have high investment project, medium investment and low investment project.

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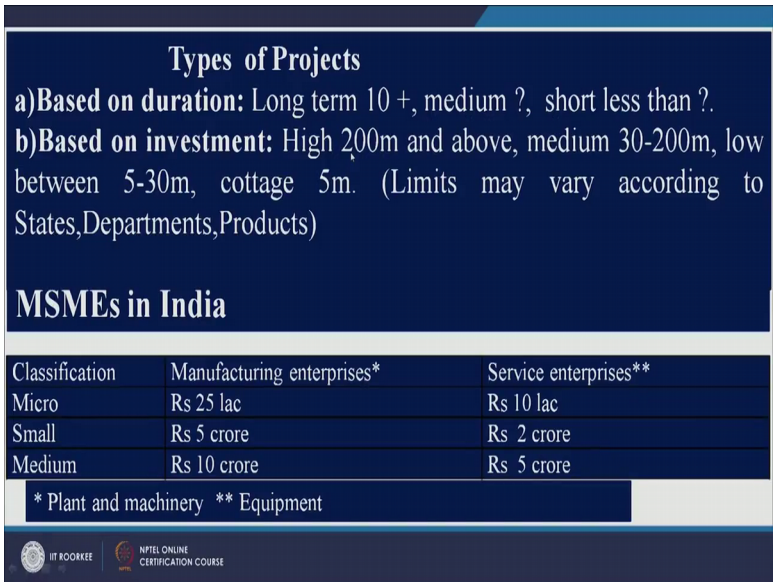

So, these are different limits given for the projects. For example, if the investment is let say 5 million, then it would be called cottage industry or cottage industry project and these limits of money investment depends on State Government to departments to departments and products to products. So, as I told you in previous session also that MSME in India have been classified on the basis of manufacturing enterprises and service enterprises. So, if the total amount of investment in plant and machinery will let say up to 25 lakh, then it would be termed as micro industry. If it is up to 10 crore, then it is medium and the other hand your service enterprises here we look at the investment in equipment and not in land and building.

So, let say if the investment is rupees 10 lakh, then it would be termed as micro service enterprise. If it is 5 crore, then it would be termed as medium service enterprise. You can also classify projects on the basis of ownership.

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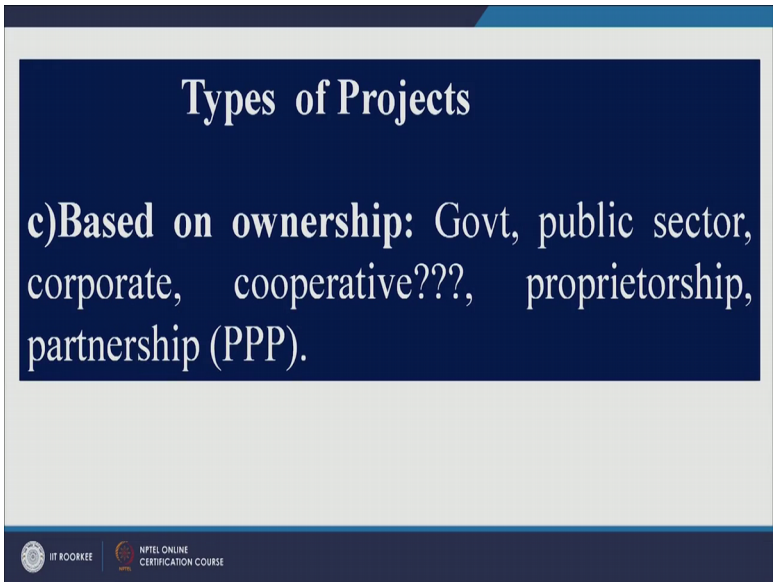

So, you can have government project, public project as a combination of these two or you can have a cooperative project, proprietary project partnership project.

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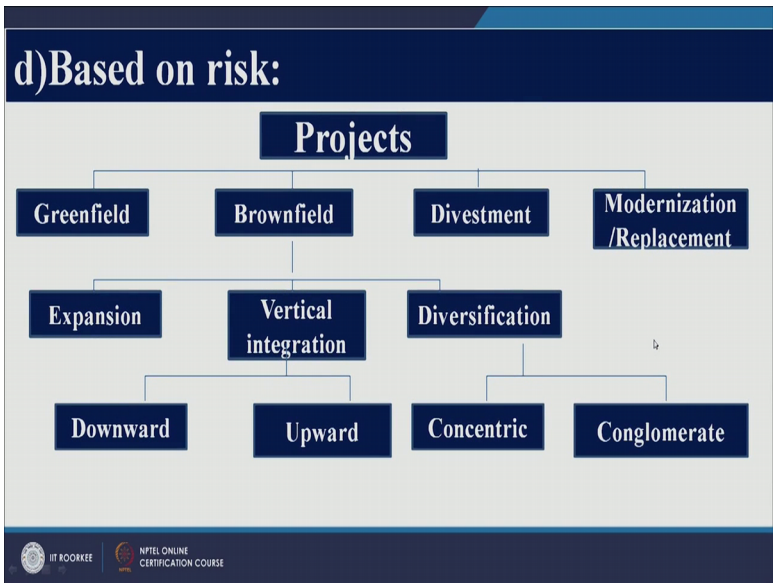

So, who is holding how much ownership besides what kind of project it is, projects can also be classified on the basis of risk. So, you can have green field project, brown field project, divestment project and modernization process.

We will see these projects in detail. So, before going for green field project, let me tell you in brown field project, you have got expansion, vertical integration, diversification

and in vertical integration you have downward integration. In diversification, you have got concentric and conglomerate. So, we will see these types of projects.

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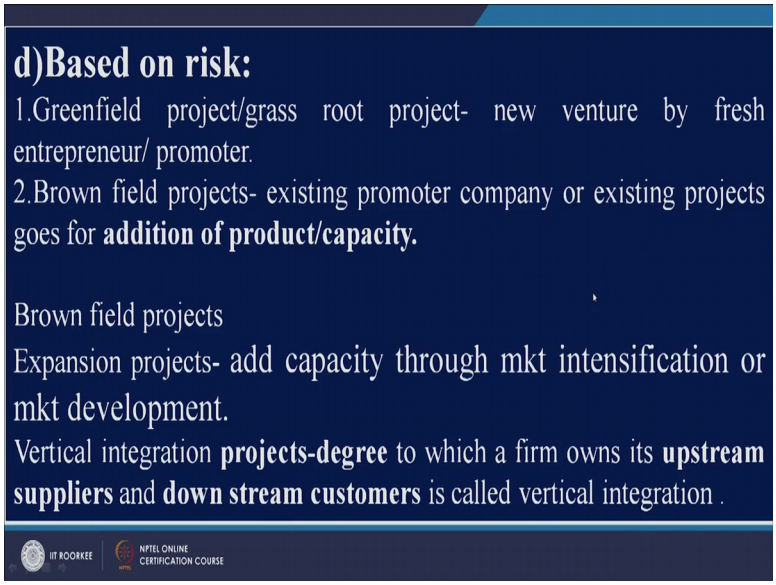

So, when you say green field project, what is the meaning of green field project. A green field project is a project when you start something new. When you go for a new start up, then that would be termed as a green project.

For example if tomorrow I start a new business let say if I am starting a coaching class, right. So, that would be a green field project, but if I am aiding some capacities to my existing business, then that would be termed as brown field project. So, when you go for expansion of your existing business, they are called brown field projects. Now, when you say brown field projects, you can have again different categories expansion project and so, add capacity through market intensification or market development. So, let say if you are already serving in Indian market, you can go for foreign market. That would be an example of expansion project.

Now, you can also have vertical integration. When you talk about brown field projects, you can have expansion project, vertical integration and you can also have yeah, and the third one is diversification. So, let us talk about what vertical integration is. Vertical integration means how closely you are associated with your up streams and down streams. So, the degree of association with your suppliers partners and it can be in upward direction, it can be in downward direction. So, vertical integration if you are

interested in definition, then it is vertical integration projects are degree to which a firm owns its upstream suppliers and downstream customers.

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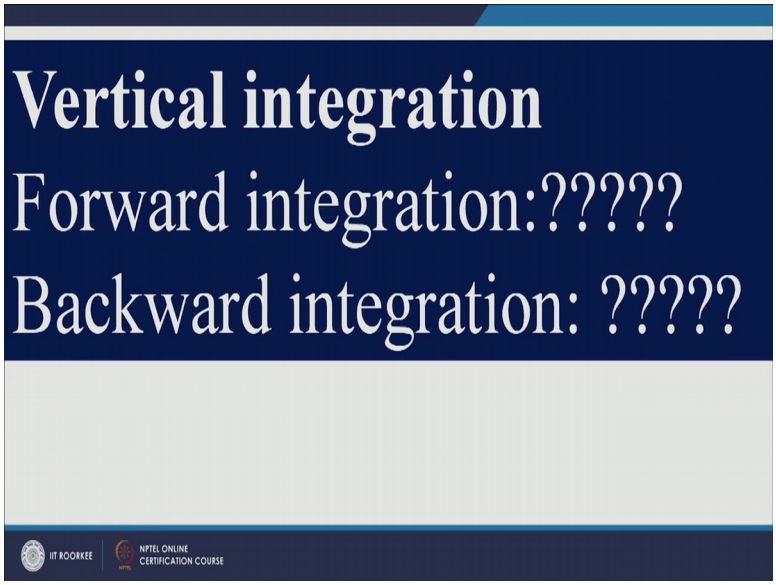

So, we will see what are the examples of vertical integration. So, vertical integration can be forward or it can be backward. Can anyone of you think of any example of forward and backward integration just for 2 seconds, ok.

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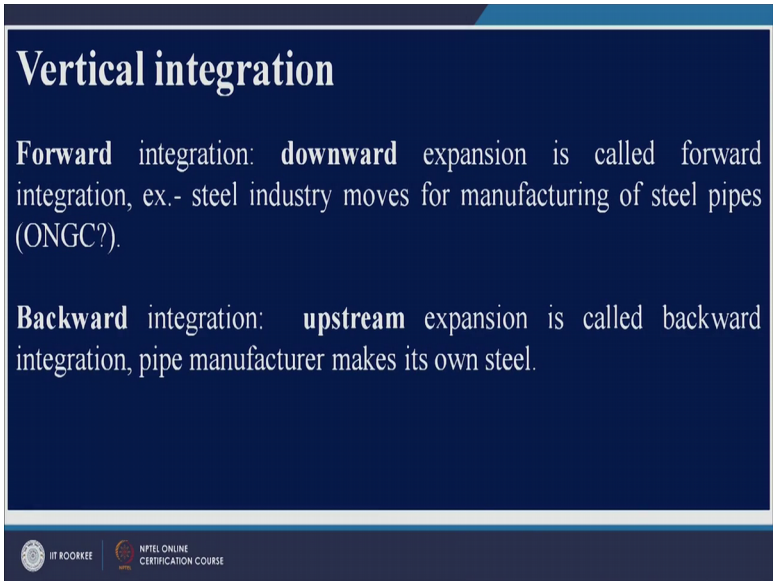

So, forward integration is this. Its downward expansion is called forward integration. For example, if I am making let say a steel and tomorrow I also start making chairs. So, that would be known as downward expansion. Let me give you another example.

All of you would be knowing that ONGC is a Maharatna company. Now, ONGC is involved in oil extraction business. Now, what would be the forward integration for ONGC? Can you think of any business? Yes. So, suppose if tomorrow ONGC also start selling petrol from retail outlets, so that would be known as downward expansion or forward integration. Backward integration is just opposite to forward integration. So, in backward integration, it is upstream expansion. This is called backward integration and for example, let say if I am in the business of making steel chairs. So, nowadays I am buying steels from vendors. If I start producing my own steel, then that would be termed as backward integration.

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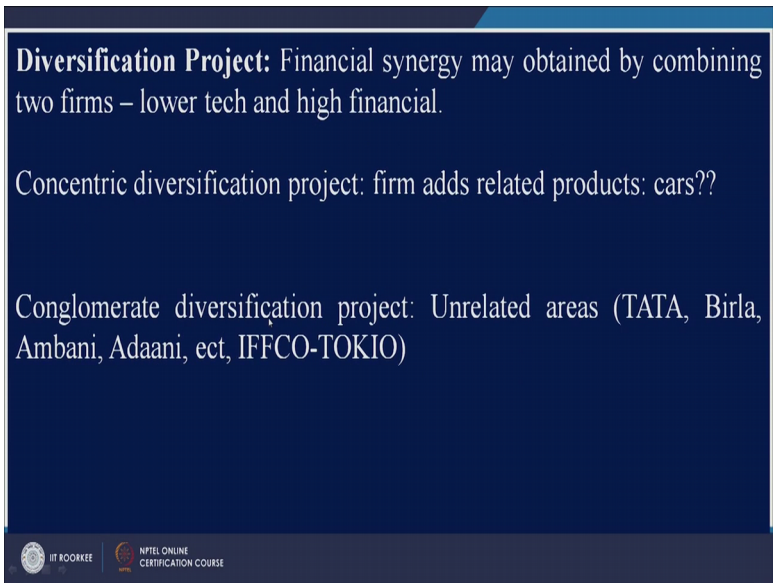

So, these two are very simple, but forward and backward integration. Then, you got diversification project. Now, let us say there are two businesses; one is having lots of cash, but does not have technical expertise and the other business has got lots of technical expertise, but does not have cash. So, both of these businesses can come together. So, that is nothing, but a kind of diversification project.

Now, when you say diversification, diversification can be in similar areas or it can mean dissimilar areas. So, when it is in similar areas, it is called concentric diversification

project. For example, let say you have got cars being manufactured by Maruti. Now, what would be the concentric diversification project for Maruti if let us say Maruti also starts making two wheelers. So, that would be a concentric diversification project. On the other hand, you have got conglomerate diversification project. When diversification takes place in unrelated areas and if you look at these days, almost all big companies are going for unrelated areas kind of diversification whether it is Tata, Birla or Ambani, Adaani or you name any big businessman, he will have diversification in unrelated areas also.

I will give you very good example on this. You would heard something called IFFCO company. It is Indian Farmers Fertilizer Corporation. So, IFFCO is in the business of fertilizer, but it is tied up with Japanese company called Tokyo which is an Insurance company. So, IFFCO Tokyo, they are jointly doing insurance business in India. So, this is a very good example of two companies from different areas coming together to get market share.

Another example could be let say you have got several companies for example, ICICI Prudential.

Now, if you look at, ICICI is a bank, it is a private sector bank in India. Why? Prudential is a life insurance company of USA and now, both of these companies have come together and they are doing life insurance business in India. So, these two are very good examples of conglomerate diversification projects.

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Let us look at what divestment project is. Let say if you are doing any any business and if something goes wrong, then you might not want to continue. So, you would divest, you will disinvest and the reason for divestment can be several. For example, you are getting loss in your business because of obsolescence. I will give another very good example. Nowadays you are getting mobile phones. Every 3rd month, a new mobile phone - reason is because the technology is changing very fast. Very rapid changes are taking place in technological field. Then, you may suffer a loss in your business because of intense competition. So, because of that you might want to divest from your business. Many times when you go for business, you do not get success. So, because of failure also, you might want to not continue in that particular business.

Let say if you are doing a business and if you think that this is not a good business and you think that some other business should be done, so you would like to concentrate on one particular product or one particular market. So, you will try to come out of some of the markets, then you have got better opportunity of investment. Many times what happens whenever you go for any business if you think that it is not doing well, then you might think that there are some other better opportunities available from where you can get more money. Then, I think that would be, in fact that is known as one of, that could be one of the reasons for divestment.

So, the fourth type of project on the basis of risk is Modernization Oblique Replacement. So, many times you go for new technology and that would come under the category of modernization because whatever business you are doing, you might think that the new technologies have come into the market and we would like to move towards those technologies. So, when you take up a project like this, it would be termed as modernization project. So, with this we have done with the classification of projects and we have classified projects on the basis of several criteria.

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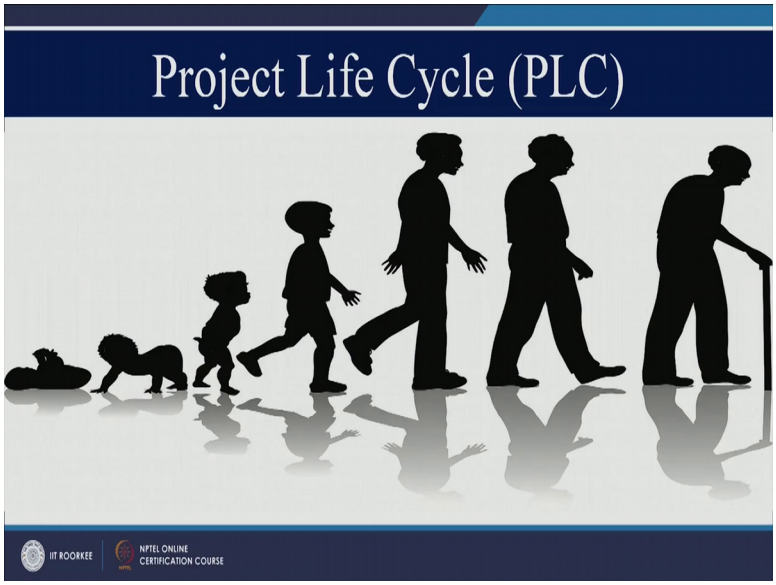

Now, let us move on to the next point which is project life cycle, PLC it is known as. So, project life cycle is similar to life cycle of a human being. In life of a human being, we have got different phases and similarly, in project also you have got different phases.

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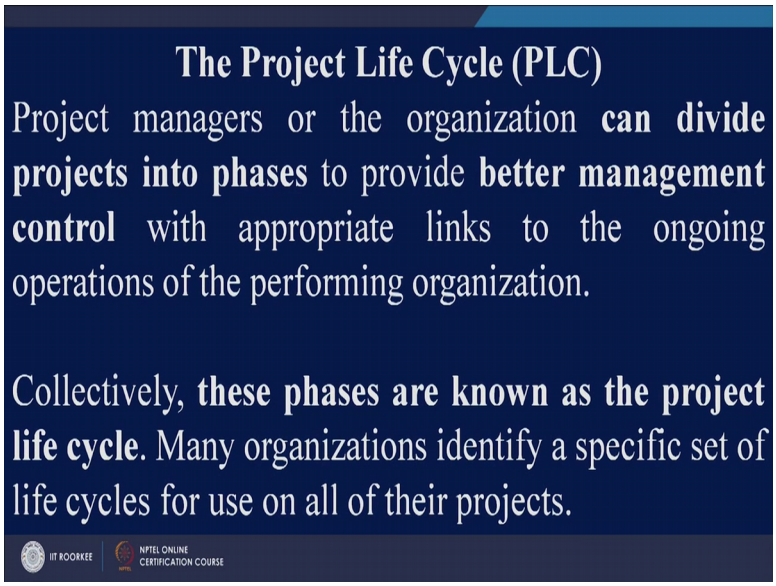

So, what do you mean by project life cycle? See what happens at the end of the day, you want to manage your project properly. So, for better management and better control, you divide your project into different phases and when you combine all these phases together, that is known as project life cycle and many organizations identify a specific set of life cycles for use on all of their projects.

So, in simplest way what PLC is? When you combine all the phases of a project right, it becomes PLC.

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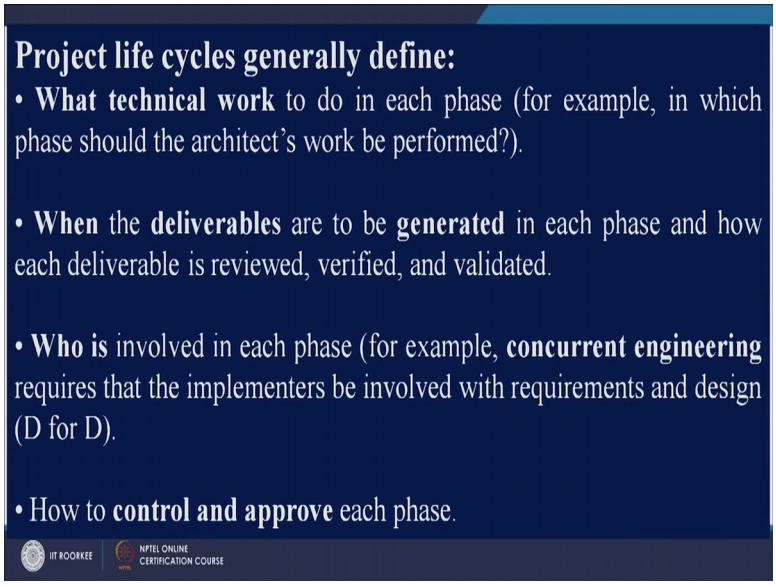

Now, project life cycle generally define for example, what technical work to do in phase because let see if you are going for construction of a building, then you would be doing several technical activities in construction of building. So, that particular activity can be termed as one particular phase. The other way of defining PLC is when the deliverables are to be generated in each phase and how is deliverable is to be reviewed. Now, whenever you go for a project, you will have several deliverables in different stages.

For example, many times when you complete a one particular phase that itself can be a deliverable, I will give you an example. Let say if you are constructing a road of 1000 kilometers. So, let say the first deliverable is when you complete 100 kilometers. So, on that particular day you can have some celebrations. The other example could be let say if you have completed 50 percent of the project or let say if you have completed 500 kilometers of road construction, then that would also be a deliverable or let say if you have in a project, if you have reached a particular target profit let say if you an 1000 [FL] rupees profit that could also be a deliverable. So, it depends on project to project.

Now, who is involved in each phase, you see what happens in a project. Project starts with conceptual of idea. Whenever you generate any idea, then your project starts and then, you have got planning phase, implementation phase, cleaning, clean-up agents on. So, in each of those phases, it is good to have a teamwork in place. One of examples is known as concurrent engineering. Now, when you concurrent engineering means in a team, you will have experts from different areas.

Let say if you are coming up with a new product and let say it has got certain life cycle, then while designing a project itself, you should have some life scientist in the team and those life scientist would tell you how that project would affect the lives of the people once you dispose the project. So, earlier people used to design products for manufacturing, you should design a product in such a way that manufacturing is simple, but nowadays people are designing products for disposal. How to design a product for disposal? So, while designing phase itself, you should take care of what problems it would cost to the lives of the people once you dispose that project.

So, these are couple of projects life cycles generally define most of the project life cycle, share a number of common characteristics. Let say if you are doing a construction project and if you are doing let say a hi tech project, so most of the times you will have

some of the phases similar to each other and most of the times those phases follow us as a sequence and it is not necessary they will follow a sequence. For example, if when you conceptualize an idea, you can also start planning of a implementation of that idea and during planning itself, you can also start little bit of execution. So, it is most of the times these phases are sequential, but not necessarily.

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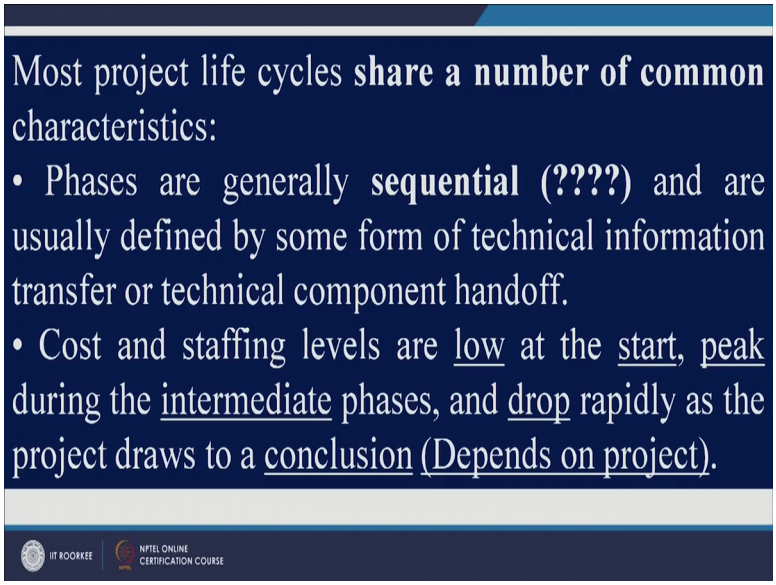

Now, when you start a project what happens initially the cost and staffing level are low in the project cost and staffing level go up during intermediate phase of the project and drop rapidly as the project move towards conclusion phase. So, broadly we can classify PLC into three phases. You have got let say a conceptual phase, you can call it initiation phase also. Then, you have got implementation phase and you can have finishing phase. So, these are three broad phases of a project. Now, in each of these phases, you can also have some sub phases.

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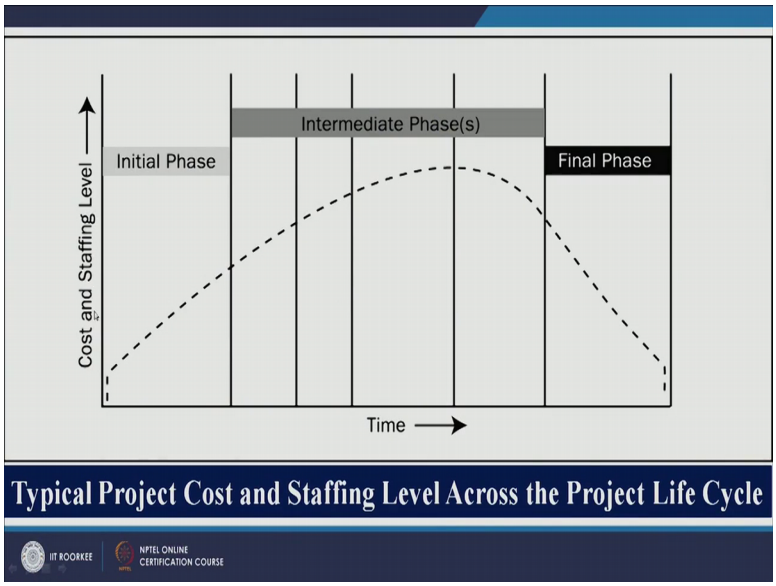

So, let us look at how project life cycle looks like. So, as I said initially in each project, you will have the cost and staffing level very low. Just see this one, this curve. When you move towards intermediate phase which is also known as execution phase or implementation phase, so staffing and costs are high while in case of final phase. It again start decreasing. So, this is basically cost and staffing level across project life cycle curve. Now, this slide which talks about level of efforts is required in each project.

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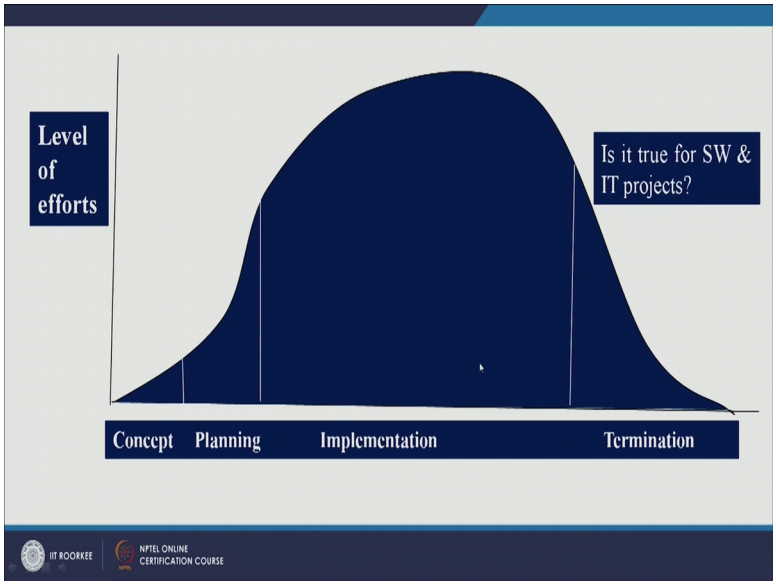

So, what happens whenever you go for a project initially in conceptual phase, you would be requiring very less efforts. Less efforts in terms of let say peoples involvement, funding requirement and so on. So, level of efforts very low in the beginning, then these efforts increase during implementation phase and they start decreasing in termination phase. Now, this curve is, this is true in most of the projects especially in construction projects, but it is not necessary that you would be having more efforts in implementation phase. Many times what happens in software and it related projects where you have got very few things to be changed in existing quotes. So, that is why in those kind of projects, you might not be having these much efforts into the project. So, this is quite an interesting slide.

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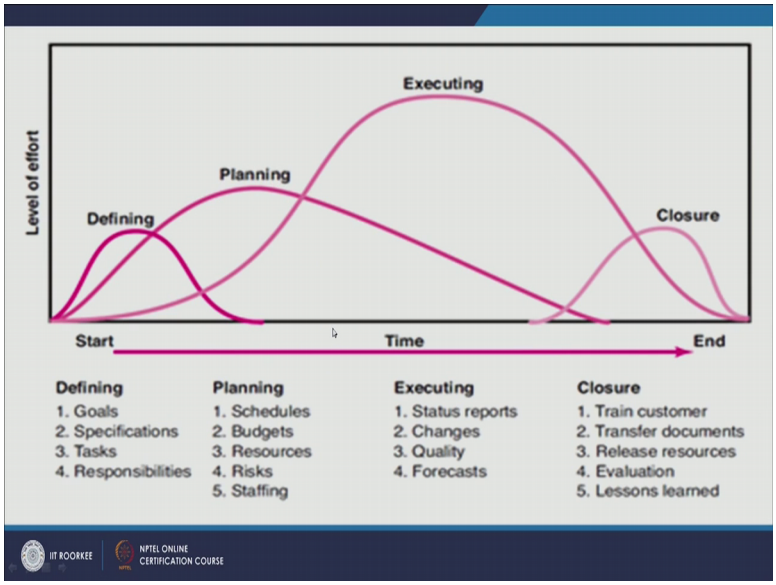

This is another slide which talks about different phases. So, you can have defining phase and planning phase. You can jointly put together these two phases and call it initial phase, right. So, we will say conceptual phase, defining phase or planning phase can be put in initial phase and then, you have got execution phase. This is known as implementation phase or intermediate phase, right. It just see the slide intermediate phase and then, you have got closer. So, in each all these phases, you would be doing different things. For example, you are defining goals, right. What are the goals of the project, what are the specifications of the project or a technical specifications of the project tasks which are to be undertaken and who would be responsible for fulfilling those asks.

So, you are doing all those things in defining. So, we are defining all these things. What after defining? You need to plan. We need to plan material, you need to plan human resources, you need to plan budget, you need to assess what are the possible risks which could be there in the project, then execute it, right. This is the most difficult step in a project execution because defining and planning can be on paper also, but execution has to be real. So, execution is really difficult and that is why you need more and more efforts in this phase and towards closure, you need to train your customer for which you have made that project and then, transfer documents related to project to client, release resources, evaluate what project you have given to the customer and you should also record what lessons we have learnt during implementation of that particular project.

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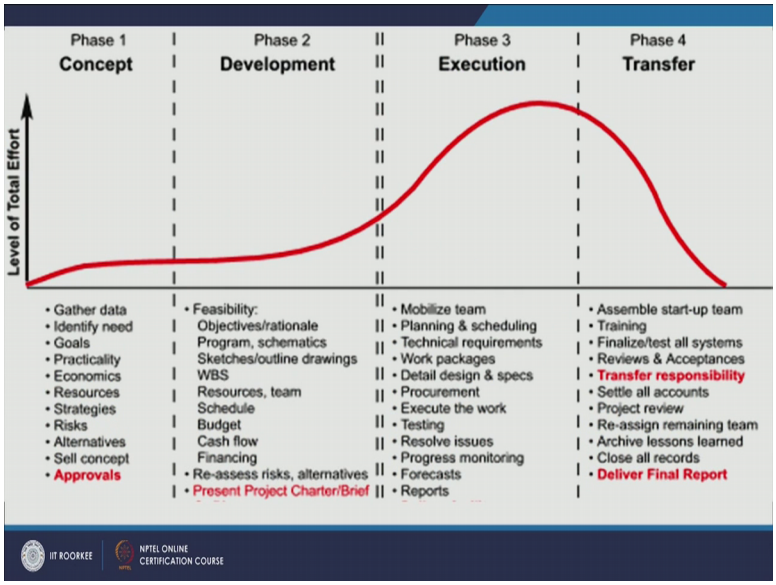

This another slide on project life cycle you have got the conceptual phase, you have got development phase, you have got execution phase and transfer phase. In fact, if you look at literature available on project life cycle, people have defined PLC in different phases. So, broadly you can say you have got initial phase, intermediate phase and final phase or finishing phase.

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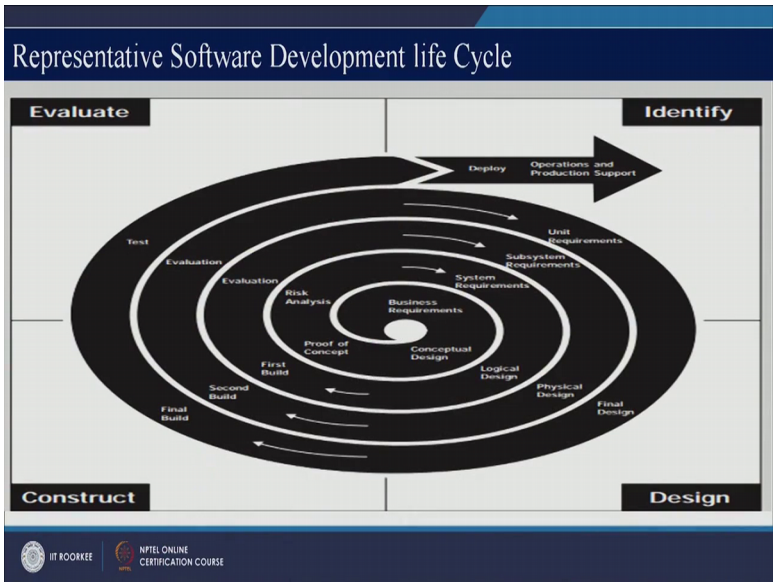

Let us look at representative software development life cycle. If you look at this slide carefully, it has got four quadrants. The first quadrant is this where you have got identify requirements. Then, you have got second quadrant design, the third quadrant is construct and the fourth quadrant is evaluate.

So, we will look at in detail these quadrants. So, first of all for every software, you need to identify what are the business requirements. For example, you need to design a software for banking industry or prudential industry or for hospital industry or for some other industry, right. So, identify business requirements, what are different systems in those particular industries or in those particular businesses, identify sub-system requirements and at the end identify unit requirements. So, after identifying all these, you need to move on to second quadrant which is design quadrant.

So, first of all design your product conceptually, then move towards logical design, physical design and finally, final design, right. So, start from conceptual design and move towards final design. So, once you are done with these design phases, you can move on to third quadrant which is construct. So, let say you identify business requirement, you have gone for conceptual design, then you need to have proof of concept because in previous phase, you have done with conceptual design.

So, look at the proof of concept, then first build to evaluate. First build actually there is you cannot say that you need to go in these quadrants sequentially. You can do some of

the activities parallely also. So, let say if you are going for first build, you can evaluate, right. Let us look at this quadrant once again. So, you are looking for proof of concept first build, second build and final build and after each of those builds, you are moving towards evaluation quadrant, right. So, what you are doing in evaluation quadrant in this one? So, first of all you are analyzing risk, right because in identification phase, you have identified different business requirements and all those businesses have got different risks, right.

So, you need to evaluate risks in the very beginning, right. Once you are done with risk analysis, go for evaluation of first build right which you did in this particular quadrant, right. So, evaluate it you are going for second build, again evaluate it final build test it, right. So, in this way you can have life cycle for a particular project and as I said the project can be of whether it sets for hospital or its let say any service industry or even if you are making product software for even a manufacturing industry.

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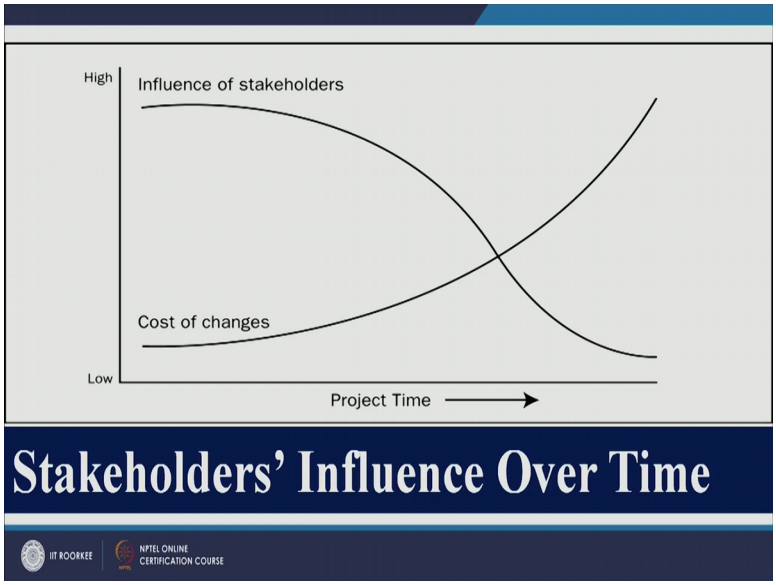

This is another slide which is about stakeholders influence over time. So, on x axis you have got project time and y axis project you have got what is the influence of different stakeholders on your project. Initially what happens when you come up with a new project, all these stakeholders will try to have more and more influence on that project. So, you have got this much influence and in the beginning if there is this, if you know if you want to do any change in the project, then the cost of that change would be very

little, but when you make any changes during mid of the project, then cost of project would be this much. Just see this and towards completion of the project if you want to do any changes, then this would be cost.

So, whatever you want to change in your project, it should be done in the beginning itself. So, what we can conclude is that initially you have got more influence of all these stakeholders in this project.

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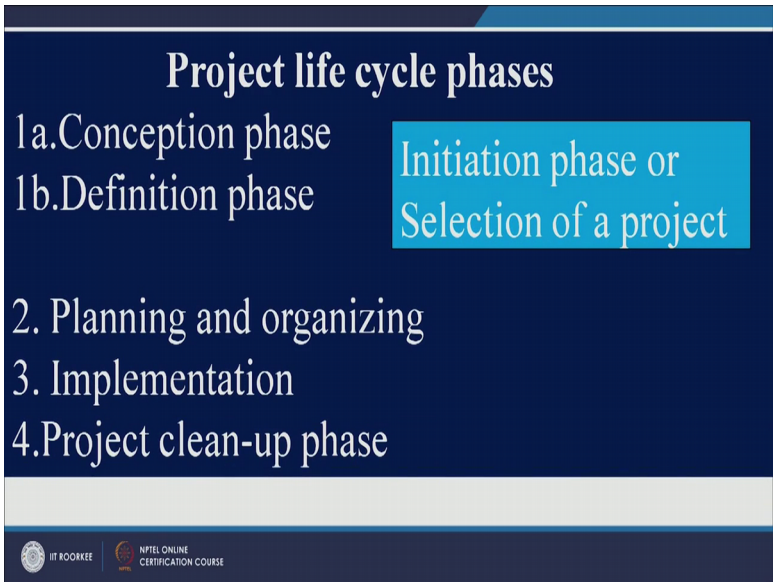

Now, before going for next session, let us recapture what we have done in this session. We have classified different projects on the basis of several criteria and we have also seen what project life cycle is, how do we define project life cycle and in this slide we have seen how different stakeholders play important role in the beginning and it is always suggested that before starting a project, let all these stakeholders sit together and they should plan the project properly.

Now, if you can go through these slides, I hope that you would have learnt something from the session and with this let me complete my session. In the next session, we will discuss about points like how to generate different ideas for project, what are different methods of project selection and there are multiple methods of project selection. We will discuss those methods in next slide. In fact, those methods range from highly subjective to highly quantitative in nature and in fact, we will be discussing some of the multi-

criteria decision making techniques also for project selection. So, with this let me end this particular session.

Thank you very much.