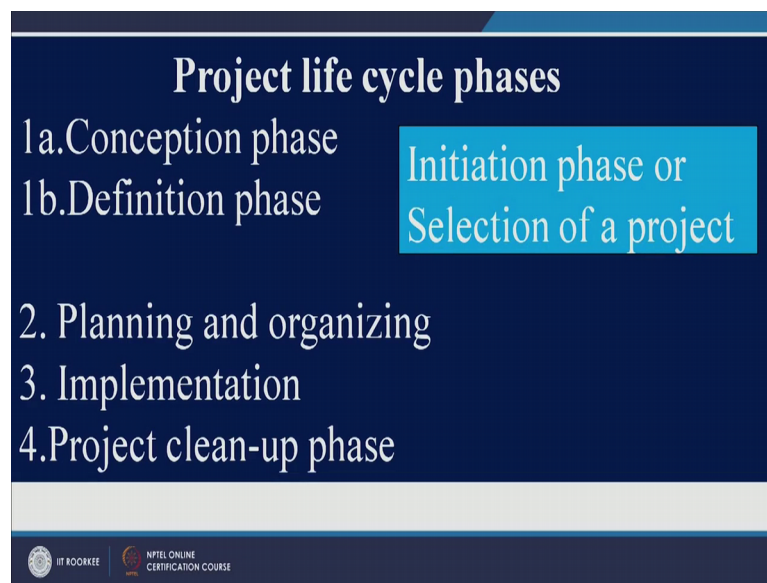


Project Management for Managers
Dr. M. K. Barua
Department of Management
Indian Institute of Technology, Roorkee

Lecture - 07
Project Life Cycle Phases & Project Appraisal

Good morning friends. Let us get started this session. In previous session, we discussed something about project life cycle and we have seen that there are basically three phases. You have got initiation phase, you have got implication phase and the third one was final phase or finishing phase. Now, before starting project selection techniques, we would like to go little bit in detail about those phases which we have seen. So, let get started about project life cycle phases.

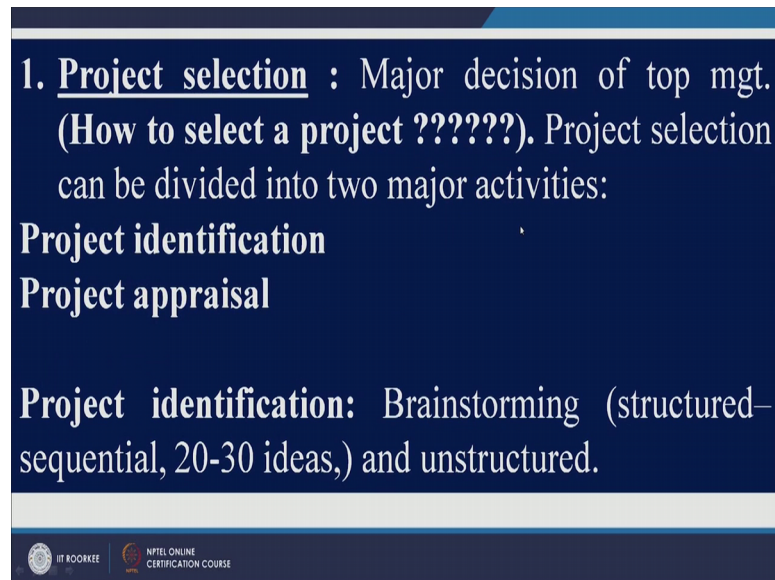
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So, you have got initiation phase. Now, in initiation phase can be classified into two sub-phases namely conceptual phase and definition phase. Whenever you start any project, the first point of any project is the generation of idea how you are getting concept about a project. So, this is the first point in any project. It is the conception phase. You need to conceive idea in your mind, then you have got definition phase and of course, then you need to define what the project is and there are several other points you need to define. The second phase is planning and organizing. So, if you wish you can club first and second phase and call them as initiation phase. If you wish you can do it, otherwise you

can have a simply four phases. Let it be conceptual phase, definition phase planning and organising phase, implementation phase and project clean up phase or you can do one thing, you can have first and second initiation phase. Second is implementation phase and this is finishing phase.

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1. Project selection : Major decision of top mgt. (How to select a project ?????). Project selection can be divided into two major activities:

- Project identification
- Project appraisal

Project identification: Brainstorming (structured-sequential, 20-30 ideas,) and unstructured.

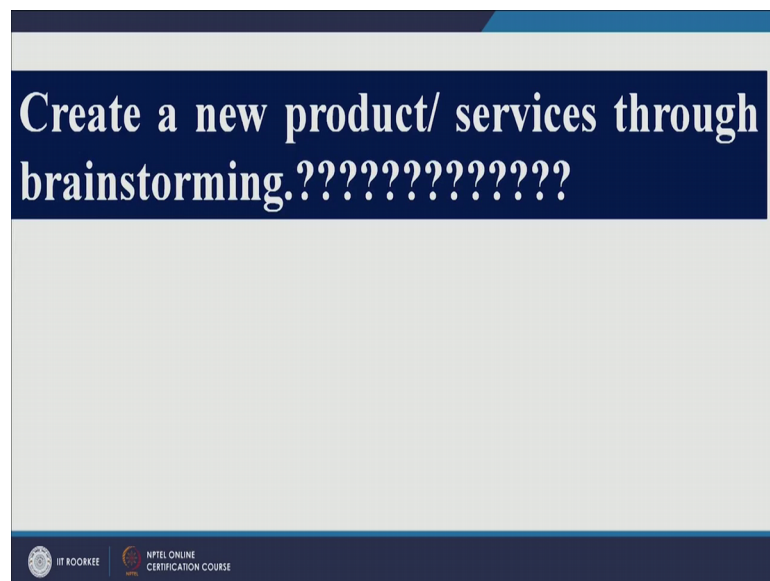
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So, initiation phase are selection of project. We will try to find out how to select a project. So, the most important point in a project is project selection. At the end of the day when you come with a project, you need to choose from several alternatives which are available. So, how to select a project is a very big challenge, very big task. Now, there are several factors which are responsible for selection of a project, but broadly we can say it is a function of risk and returns. If the risk is more, return would be more in a project and if is risk is less, return would be less. So, broadly we will say it is a trade of between risk and return. If you can take more risk, you will earn more returns.

So, project selection can be divided into two major activities, project identification and project appraisal. So, first of all we should identify projects and how to identify a project, again there are multiple ways. Project identification generally should be done through brainstorming sessions. In fact, in brainstorming session you will have several ideas coming up from team numbers of the brainstorming session and this brainstorming session can be structured and can be unstructured. When I say structured, it means let say if there are 10 people sitting for brainstorming and each one of them is coming up with

an idea. So, in a structured brainstorming session, everyone will have to come up with an idea. In unstructured, it is not necessary and anyone can give his or her own idea. So, you can have 20 to 30 ideas generated in brainstorming session and then, you try to evaluate those ideas on several parameters, you need to look at let say its marketing feasibility and a technical feasibility and so on. So, this is one of the ways of project identification which is brainstorming.

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Now, when you create a new product or a new project or new service through brainstorming, there are several challenges.

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Ways to create new product development through brainstorming

- Kodak - informal sessions- engineer and designer with customers- problems & needs.
- Allow time off: scouting time- for technical people to putter in their own, pet projects.
- Survey your customers.
- Use iterative models: customers group discussing problems- technical people in another room listening and solving.
- Set up an idea vault.
- Interaction b/w technical people and supplier - through visits .

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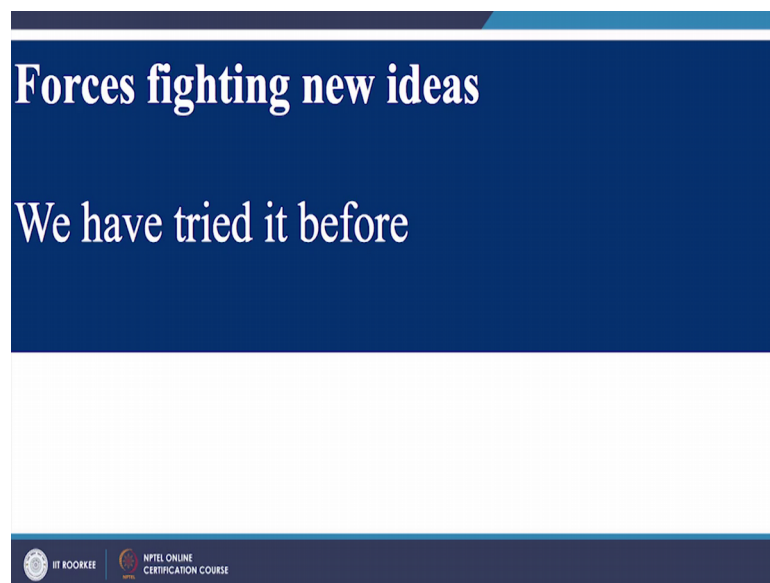
There are couple of examples of brainstorming. If you look at Kodak company, now Kodak company does go for brainstorming session. It is informal session with the customers, along with engineers and designer of the Kodak company. So, when they go for such type of brainstorming session, engineers and designer come to know what problems customers are facing and this is the way in which company can resolve some of the problems. Now, it is good to give some time off to the technical people of the organization, specially R and D people. It is called allowing of time off, so that they can think something new during time off. It is also good to survey your customers because survey will help you what problems customers are facing and you can come up with solutions.

You can also have some iterative models like you can have different sessions with customers. I will give you an example. Let say if you are a doctor, then you can always have some sort of informal session with your patients, so that they can tell their problems. Let say group of doctors sitting in a group and group of patients sitting in another group. So, they can informally talk to each other. It is good to set up an idea vault in an organization. You will have several employees, so let there be an idea vault. Whenever a new idea comes to any employee, he will write it on a paper and he will put it in idea vault. Interaction between technical people and supplier and let say if you got 10 suppliers and 10 vendors, then it is good to visit their sites, so that those vendors do not send you wrong materials. So, it is good to have visit of your engineers at

the site of vendors. So, these are couple of ways in which you can come up with new ideas.

Now, the process of brainstorming is it looks very simple, but it is very difficult because whenever you go for brainstorming session, there are several forces which would restrain people in giving their ideas. Let us look at couple of those forces. Whenever you are going for a brainstorming session, let say boss says I have got a great idea. Now, boss should not say it is a great idea at the end of the day. It is the team which would decide whether the idea is great or not, right. It will not work here many times when an employee gives an idea and other employees may say that this idea will not work here. No, in the beginning you should not say like this. Let us get ideas first. Let the idea be foolish in the beginning, but you should be receptive towards all the ideas. So, just by saying it will not work here, you are suppressing your employees in giving new ideas. We have tried it before.

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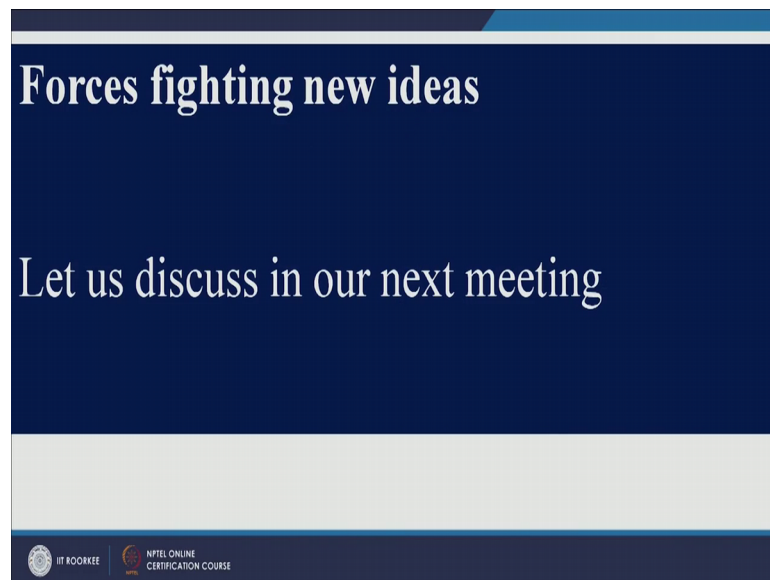


Now, generally people say that we have tried it before. Now, you would have tried it before, but let us try once again. Something would have gone wrong previous time when you tried it before, but it is possible that this time it may work. So, do not say that we have tried it before and this is not the right time. It is possible that this is not the right time for implementing that idea which an employee has given, but it is good to note it down in the beginning. Later on you can implement it at some right point of time, it

cannot be done. You see whenever you get an idea from employees, you do not say it cannot be done. You should try for it. It is always good to give one or two tries to that idea and then, if it does not work, then you should stop it, but initially saying it cannot be done, it is not the right thing. It is not the way to do things here. Generally you will find this kind of statement is not the way do things here. Come on if you not been doing things in these way, let start doing things in this way. It is possible that it may strike and you may get a good product at the end of the day. So, just saying that it is not the way do things here, it is not good.

We have done all right. Without it now this is again one of the problems in brainstorming session. We have done, all right. Without it if you have done all right without something new, then why you are having brainstorming session because the purpose of brainstorming session is to come up with new idea, new product, new project, new service. So, it is not advisable to say we have done all right. Without it you should be very receptive towards ideas. It will cost too much you say initially when you start something, it would be very expensive affair. So, later on you can cut down on cost and initially saying that it will cost too much is not a good thing.

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Let us discuss in our next meeting. Now, this is very famous line in a meeting, let us discuss in our next meeting. Try to discuss the idea in the meeting itself, in the current meeting itself and try to have an initial screening of that idea rather than discussing in

next meeting. So, these are couple of forces which hinder generally the idea generation process.

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During brainstorming activity: management has to be:
Receptive
Vision for future growth
Keep long term objectives in mind
SWOT

Perform preliminary project analysis to assess whether a project proposal is worthwhile or not.

Documents like: **project / product documents** (characteristics of project), **feasibility document** (constraints), **project concept** document (what, how, why – is to be done), **project charter** (it formally communicates the initiation of the project, scope, authority, KSF)

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Now, during brainstorming session, the management has to be very receptive and management should keep vision for future growth. Then only the management would be receptive, keep long term objectives in mind and look at swot first. Whenever there is an any idea, try to screen that idea on swot analysis i.e. what are your strengths, what are your weaknesses, what are the opportunities available outside and what are the threads available outside.

So, if you look at swot strength and weaknesses are within while opportunities and threads are external to the organisation. Perform preliminary project analysis to assess whether project proposal is worthwhile or not and you should come up with documents like project document which would be describing the characteristics of the project, feasibility document. You need to look at constraints namely your technical constraints, financial constraints, marketing constraints and so on. Project concept document what the product is, why you are coming up with that project, who will implement that project and project charter. Project charter is a document which formally communicates the initiation of the project, its scope, its authority and key success factors. So, you should also look at these documents.

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Ex: Reduce vehicular pollution in your city

- 1.
- 2.
- 3.
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Criteria for screening ideas
Effectiveness to achieve objectives
Cost of the proposal
Ease of implementation
Time needed

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Now, this is an exercise you can take up for this session, reduce vehicular pollution in your city. In whichever city you are living, try to come up with several ideas, so that pollution can be reduced in your city and let say if you come up with five ideas, then evaluate each idea. If the tune has to achieve this project, this project cost of the proposal let say if your idea is to come up with more tree plantation, then what would be the cost of the proposal, ease of implementation. Let say you are coming up with an idea let say starting metro in your city.

Now, you need to look at effectiveness, cost of the proposal, ease of implementation and time needed. Similarly you can have some other ideas. For example, you can always have specific time for trucks entering into your city. So, let the entry of trucks in your city be from let say 10pm to 6am in the morning. That can be one of the ideas to reduce vehicular pollution in your city. So, this is an assignment you can work upon.

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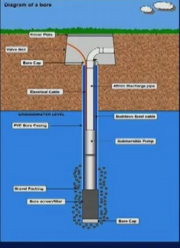
So far we have seen different points related to project selection and specially related to brainstorming. Let us go for project appraisal. So, once you have selected the project, you need to appraise it on several parameters and this is quite an important process. It is done by again top management and once a project is screened on all these criteria, then you can start the project.

So, market appraisal, if you are coming up with a new product, then you need to talk about who are the customers, who are the people requiring that particular product, what would be your market share, what is the market share of existing competitors, what is the market share of existing market leader, what is the aggregate demand in that particular market, possible pricing options you need. Let say if your competitor is selling a product at let say 10 rupees. So, what are your possible options? Should you sell at 10 rupees or less than that or more than that are 10 rupees, but more quantity. So, you can have several possible options. So, all these and there are many more in marketing appraisal. So, you should go for market appraisal of your project.

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Project appraisal

Technical : Engineering aspects, location , size, process, etc. (bore well)



The diagram, titled "Diagram of a bore", shows a cross-section of the ground. It labels various layers: "Soil", "Subsoil", "Water table", and "Groundwater". A bore well is shown as a vertical shaft with a pump at the bottom. Labels include "Bore well", "Pump", "Water table", "Groundwater", "Soil", "Subsoil", and "Groundwater".

Financial factor?????

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Now, let us look at technical appraisal of the project. Now, in technical appraisal you look at the technical specifications. Let say if you are going for a bore well, then what could be the possible technical specifications you should look at. You should look at where you want bore well, what would be the depth, what would be the diameter and what would be the process. So, these are couple of technical aspects as for as bore well project is concerned. Similarly you can have some other technical aspects for some other project. Now, what do you think about financial factors? Financial factors could include what according to you. Just 5 seconds think over it, yes.

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Project appraisal

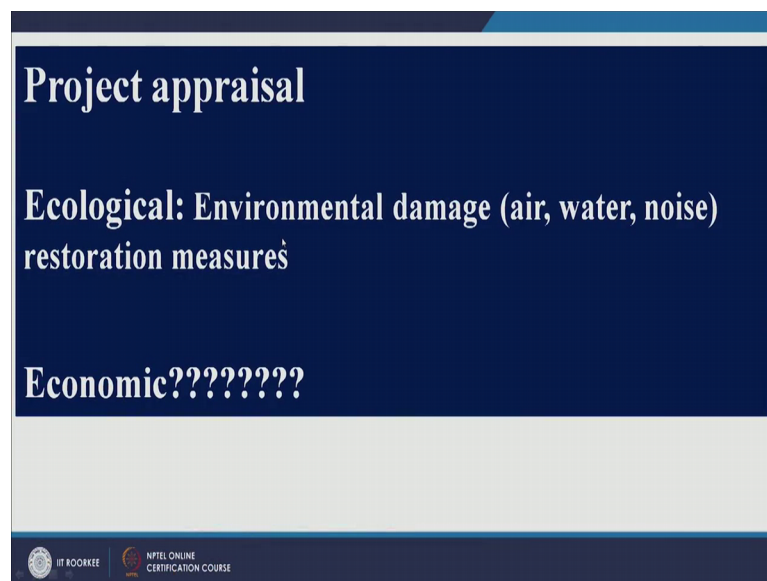
Financial appraisal: Cost of project and means of sources, impact on financial position of the firm, working capital, cash flows over time, profitability, BEP, net present worth, IRR, PBP, Risk.

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So, some of the financial factors can be like this what is the cost of the project, what would be the sources of funds, whether you would be investing from your own pocket, whether you are taking loan or you going for IPO and are you going for some other sources. So, you need to look at issues like these. What would be the impact on financial position of the firm? When you come up with a new project working capital requirement for the project because you need to fulfil day. Today's requirements cash flows over time, what would be the cash out flows in a project, what would be the cash inflows in the project, is that project profitable, you need to look at this stage profitability breakeven point. Breakeven is a point where total cost is equal to total revenue.

So, at what particular quantity breakeven point will come, net present worth IRR payback period, what is the payback period of the project, in how many months or in how many years you will get the investment back and risk. So, these are couple of financial appraisal points.

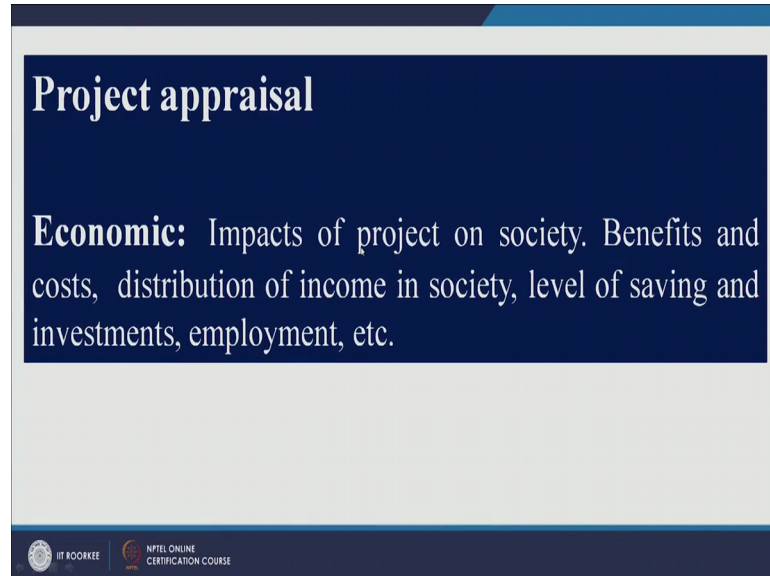
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Now, we have got ecological appraisal. Whenever you go for a project, you need to look at how your project is damaging the environment. If it is a construction project, definitely it would affect air quality of that area, it would definitely affect trees if there are any in that area and so on. So, you need to look at issues like air, water, noise as per as environmental damages are concerned.

Now, you should also look at economic factors. Now, what do we think? According to you what would be the economic factors?

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So, economic factors may include points like the impact of the project on society. You see whenever you come up with a project, it might affect society negatively or positively, but it should affect positively more and what are the benefits of the project to the society, what are the costs that the society is paying for that project distribution of income in the society, whether the income would be distributed equally to different members of the society which generally never happens, but at the end of the day, the project should help society level of saving and investments, employment etcetera. So, all these points come under economic appraisal.

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Project appraisal

Production factors: Time to complete project, availability of resources, flexibility of operations, connection with existing production line, energy requirements and its sources. Expected quality of product.

Personal factors:??????

Legal factors:??????

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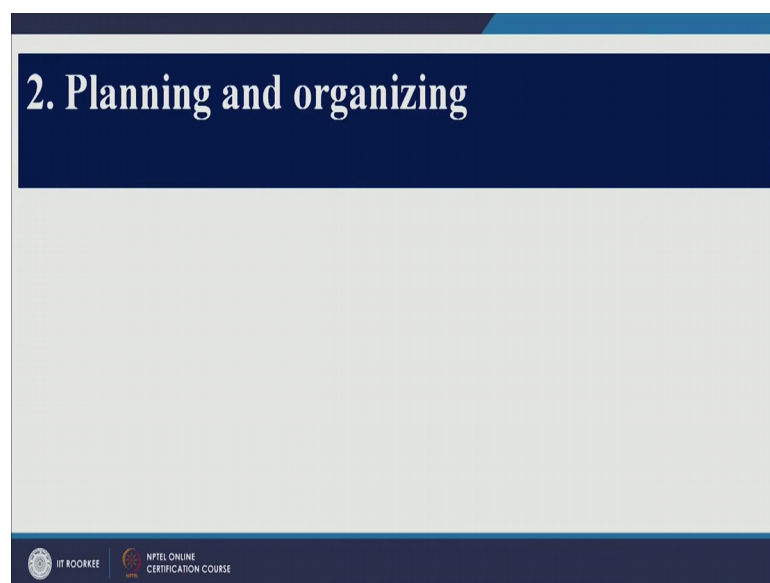
Let us look at production factors. In production factors, how much time you would be requiring to make a product availability of resources, let say if you are starting a cement industry. So, do you have adequate claims, do you have adequate equipment and machineries, do you have adequate transportation facilities, do you have adequate skilled employees and so on. Flexibilities of operations connection with existing production lines because if it is a cement industry, it would be definitely outside of the city. So, how you are bringing your final product in the city? So, there should be connection with existing production lines, connection with existing transportation facilities, then what would be energy requirement for cement project expected quality of the products. So, all these points you should look at in production factors.

Now, what are the points do you think would be under personal factors? Yeah, personal factors means human resources. It say though the personal management is part of human resource management, so personal factors can be let say how many employees you want or should be, their qualification, how you are going to recruit them, what would be your selection process and what kind of let say leaves you would be given to your employees, what is your promotion policies, all these things would come under personal factors and then, you have got to legal factors.

Legal factors are the factors generally you need to look at legal issues. For example, if you are coming up with let say new dam, then for a dam you need to acquire lands from

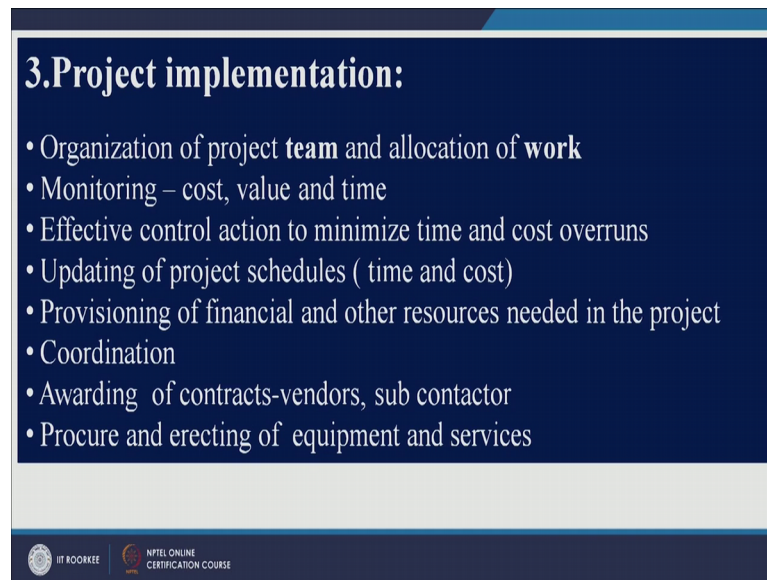
those people who are living in that area. Let say if some person has filed a suit in court of law, so how you are coming up with your answers against that particular law suit. So, these are couple of legal factors. So, you need to look at warrantees, any compensations to be paid, who would be the lawyers representing your organization and similar things. So, once you select a project, the next point is you need to apprise the project and we have seen several appraisal criteria, namely you can again think of for example, we have discussed though all these points, marketing, technical, personal, production and so on, right.

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Second point is planning and organization, right. If you wish you can keep the first phase and this phase with initiation phase or you can have it, you can study these phases as this phase separately also. So, planning and organising, what is to be plan. Now, you have selected a project, now what is to be planned, you need to plan resources, right and what are the resources you have got, several resources. Let say may machine, material, money, method and there are others as well.

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3. Project implementation:

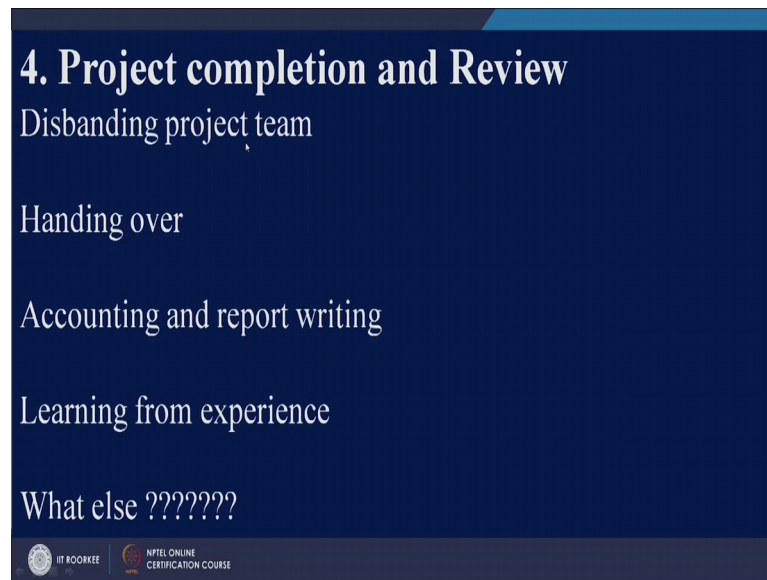
- Organization of project **team** and allocation of **work**
- Monitoring – cost, value and time
- Effective control action to minimize time and cost overruns
- Updating of project schedules (time and cost)
- Provisioning of financial and other resources needed in the project
- Coordination
- Awarding of contracts-vendors, sub contractor
- Procure and erecting of equipment and services

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Then, the third phase is project implementation. This is the most difficult because the identification selection of project can be done on papers, planning and organization can be done on papers, but project implementation you have to really implement the project now. So, what is project implementation? Project implementation includes organization of project team and allocation of work to those project teams, monitoring cost of the project time of the project, whether the project is as per planned time or not, whether the cost is as per planned budget or not, effective control action to minimize time and cost overruns, try to have effective control on these two, updating of project schedules. Whenever there is any change, then you need to update that change in your plan.

Plan provisioning of financial and other resources needed to project many times. What happens is your project is let say the actual budget is let say 10,000 rupees, but you have spent that budget in just 75 percent of the time itself, then you need to look at some other sources of fundings. So, this is provisioning of financial and other resources needed in the project coordination. Of course, coordination amongst deference stake holders awarding of contracts to vendors and sub-contractors because you are not doing all the activities, right yourselves procure and erecting of equipment and services. So, this is all about project implementation.

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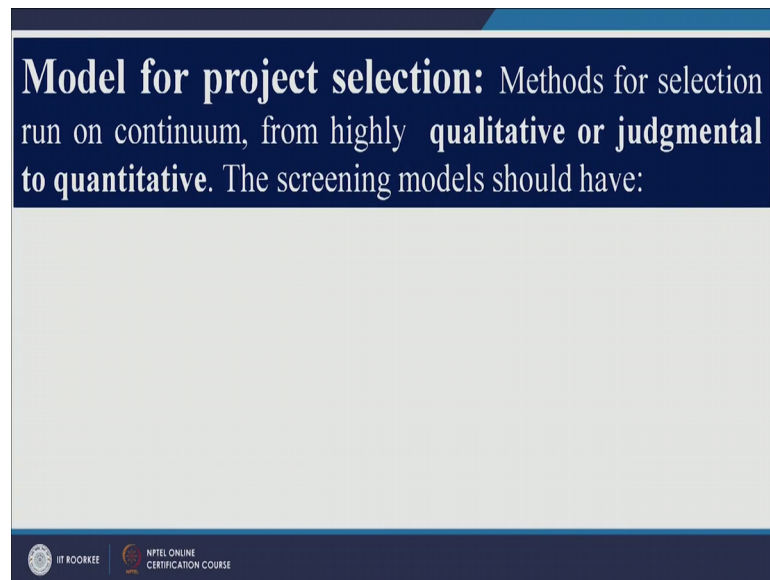


Now, you are done with project implementation. The next phase of the project life cycle is project completion and review. So, you complete the project and review what mistakes you have done in your project, what are your learnings from the project and these are other things disbanding the project team since you have implemented the project, now you need to disband your project team.

So, in project team as I said you have people from different functional departments or you may have people from different organisations, so those team members will go back to their respective organizations or functional departments, handing over the project to the client because you have made a project for some clients. If it is not, if it is for your own use, then you need to start working on that project, accounting and report writing, learning from experience. This is very important. Most of the people generally do not note down learnings from experience. It is very important point because if you have the list of lessons learned, you would not repeat mistakes if you have committed in a particular project. In your future projects, what else apart from these things in this phase.

So, you have handed over the project to client, you have disband the team and so on. What else left in this phase? You need to support the client once you deliver the project to him. So, there would be definitely training of the employees, re-training of employees, you need to provide technical support even after delivering a project to client, right after sale after sale services are to be performed in this point.

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Model for project selection: Methods for selection run on continuum, from highly **qualitative or judgmental to quantitative**. The screening models should have:

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So, let us discuss couple of models for project selection, what are methods of project selection. So, before starting this session, let me summarise what we did in this session. We discussed different different life cycle phases in detail, we have also seen what is to be done in project completion and review phase and the most important thing we have seen its lessons, lesson learning from the project. So, with this, let me complete this session. We will have next session after sometime.

Thank you very much.