

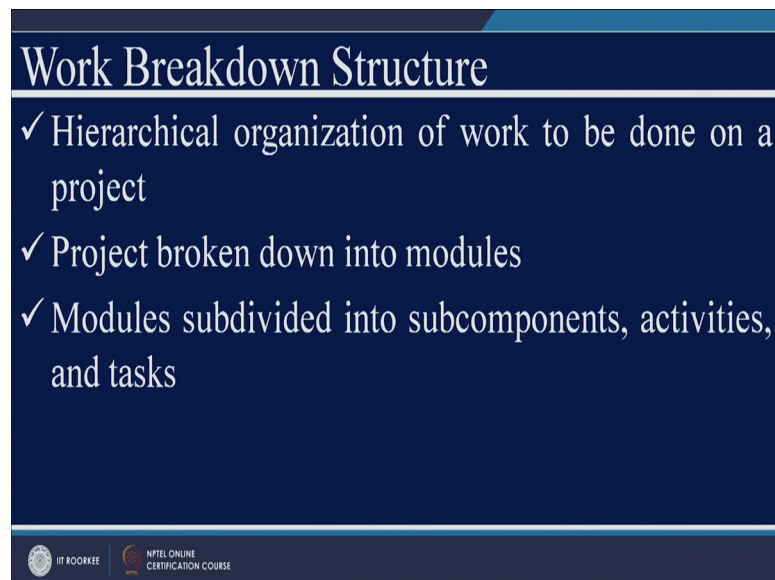
Project Management for Managers
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Lecture – 03
Types of Structure Organizations

Hello friends. Let us start whatever we were doing in previous class. I told you that the success of the project depends on several factors, but it mainly depends on three factors; namely, strategy of the organization, structure of the organization, and culture of the organization. We have already defined what is strategy. As I said strategy is always prepared by top management of the organization, and it involves people from several disciplines. So, they are preparing strategies and it is the responsibility of level two and level three; second and third level managers of the organization to implement those strategies

So, before I go for the second point which is structure let me tell you little bit about what is the hierarchy of project. So, there is something called work breakdown structure.

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Work Breakdown Structure

- ✓ Hierarchical organization of work to be done on a project
- ✓ Project broken down into modules
- ✓ Modules subdivided into subcomponents, activities, and tasks

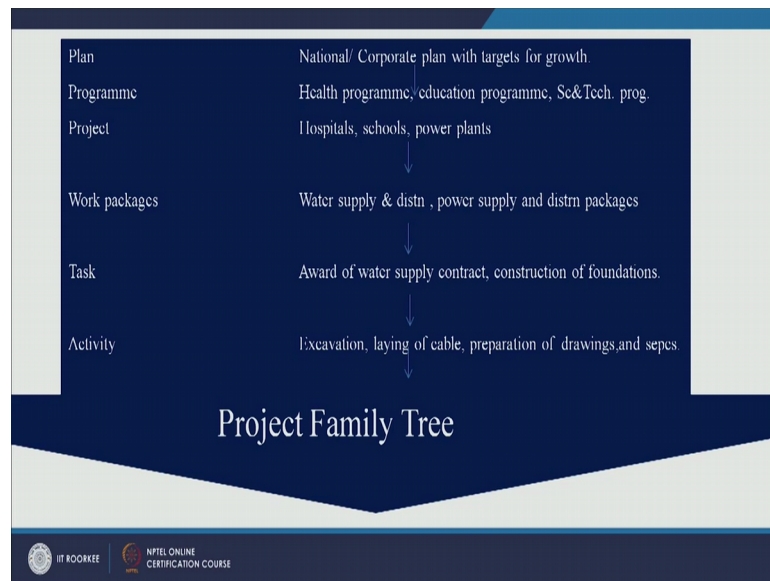
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In work breakdown structure what we do? Generally, whatever work we do we divided into different parts and again those parts are divided into sub parts. So, this is nothing but hierarchy of a project. So, project is broken down into modules and then some models, it

depends on what kind of resources you are having, what kind of specialization you are requiring and so on.

So, modules are as I said again divide into subcomponents activities and task. So, this is how you break down project into different components.

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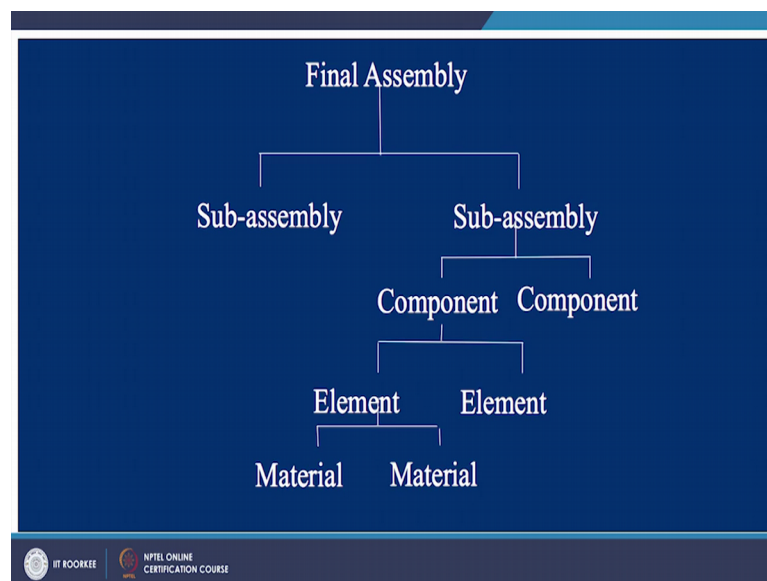
This is one of the examples of project family tree. So, at the top level you have got plan. For example, in our country we have 5 year plans; so you can have these plans at national level or in an organization at organizational level. So, these plans are further divided into programs. So, for example, you can have health program, education program, or let us say skill development program, or digital India program. So, once you have got these programs you can further divide these programs into projects.

So, let us say if your program is let us say- education program. So, it can be divided into technical education, education for women, education for children, can have medical education, you can have pharmacy education so on. So, after dividing plans we prepare programs and then from programs we again go to one level down and then we have got projects. For example: let us say in education program you can have different schools, you can have central schools, you can have some private schools, you can have public and private partnership type of schools and so on.

Once you are done with project then you further go down and you come up with work packages. For example: in school you can have different rooms, what would be the distribution of power or distribution of water in a school and so on. So, these are different work packages. And then we divide work packages into task. So, the task can be let us say- award of water supply contract to a contractor or construction of foundation of let us say school. So, these are different task. And then we divide task it into activities. So, this is nothing but project hierarchy; you can also call it project family tree. So at the top level you have got plans, at the bottom level you have got different activities.

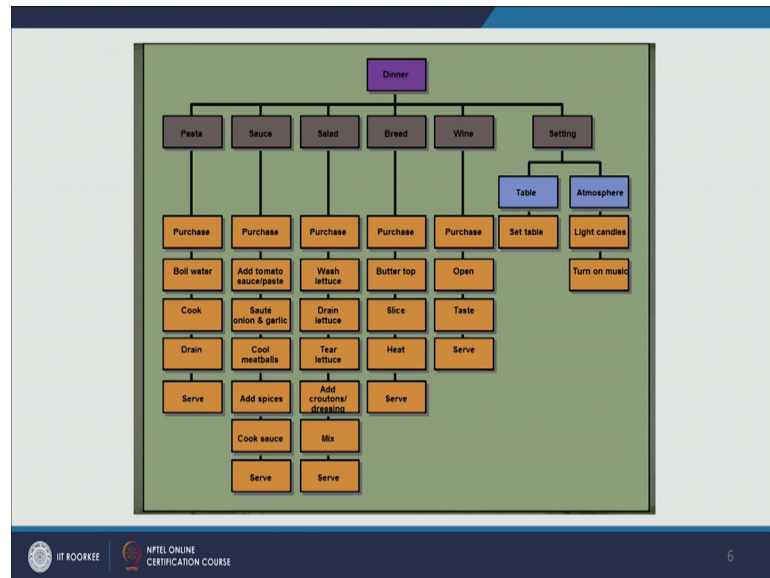
Let me tell you one more example; those who are mechanical engineers and those who are working professional they would be knowing that in a final assembly you have got different sub assembly and sub assembly is made up of different components. Similarly, components can be broken down into different elements and each element can have different materials.

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This like bill, this is nothing but a bill of material. So, you can say that breakdown structure is somewhat similar to bill of material. I will give you another example of project hierarchy.

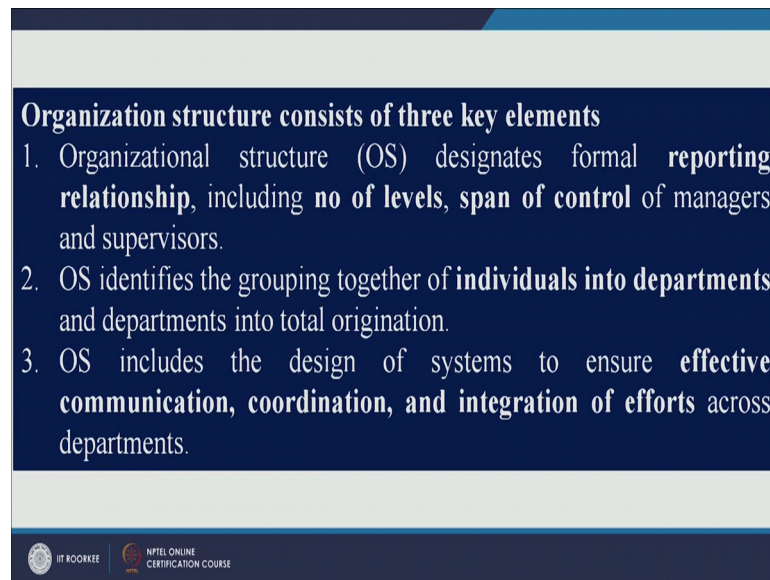
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Let us say if you are going to organize a dinner party and its nothing but a project, because you are doing it for the first time. So, for dinner party you would be requiring different materials like pasta, sauce, salad, bread, wine, and sitting arrangement. So, you would be purchasing these items right from pasta to wine, and you would be also arranging different sitting plans. So, you have got table, then set table, then you would have an atmosphere for dinner. So, you can have light candles, you can turn on music and so on.

So, these are different levels in this particular project. So if you look at these things, for example if you are going for pasta then first you are going to purchase it and the last activity is serving of pasta. So similarly in all these sauce, salad, bread, and all these things the last activity is serving. So, this is nothing but project hierarchy.

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Organization structure consists of three key elements

1. Organizational structure (OS) designates formal **reporting relationship**, including **no of levels**, **span of control** of managers and supervisors.
2. OS identifies the grouping together of **individuals into departments** and departments into total origination.
3. OS includes the design of systems to ensure **effective communication, coordination, and integration of efforts** across departments.

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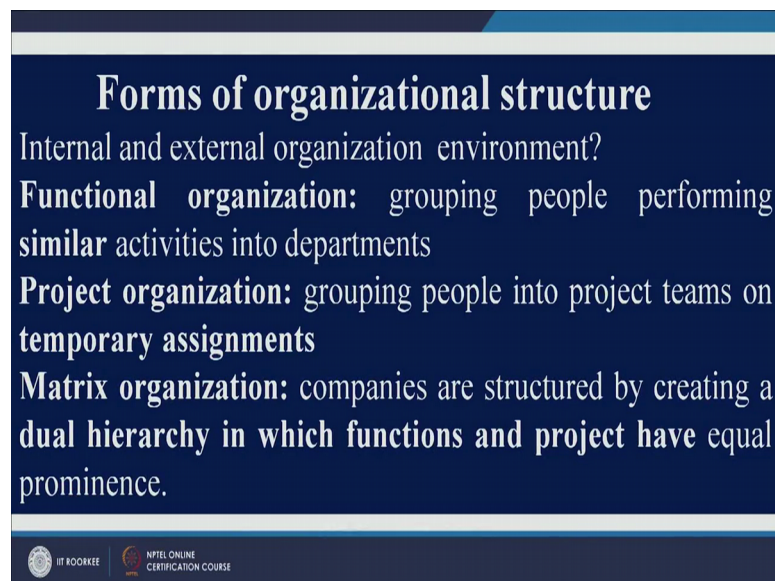
Now, let us talk about the second critical success criterion for project which is organization structure. So, we have seen that strategy plays an important role in successfully completing a project. Similar to strategy organization structure also plays an important role, because in some organization you may have vertical type of organization structure, in some you may have a flat or horizontal type of organization structure.

So, success of a project also depends on how many levels you are having in the organization, because if you have got more number of layers there is a possibility of delay of the project. So, let us look at what is organization structure. It is nothing but basically how people would be reporting each other in an organization, how many levels should be there in an organization, what should be the span of control. Span of control means for example if I am a manager then how many people are reporting to me- that is span of control.

Now, it depends on organization to organization, product to product, what kind of organization structure you want to have. If you look at span of control again it depends on what kind of work you are doing. It also depends on the geographical distance, the technology available for controlling your lower level staff and so on. So, organization structure is nothing but a formal reporting relationship, it will have number of levels and span of control.

So, we divide different individuals into groups and then those groups are nothing but we call them different departments. And these departments ultimately become total organization. Organization structure also includes; the objective of having organization structure is to have an effective communication between any two levels of the organization and you can also have better coordination amongst different departments. So, this is all about organization structure.

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Forms of organizational structure
Internal and external organization environment?
Functional organization: grouping people performing similar activities into departments
Project organization: grouping people into project teams on temporary assignments
Matrix organization: companies are structured by creating a dual hierarchy in which functions and project have equal prominence.

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Before I go for different types of organizational structure as I said, what kind of organizational structure you should have it depends on several factors. It depends on what kind of CO is there in the organization, it depends on resources which are there with the organization, it depends on educational qualification of employees of the organization, it also depends on geographical location and so on. So, there are basically internal and external factors which affect what kind of organization structure one should have.

So, the very first type of organization structure is functional organizational structure. The oldest types of organizational structure are basically grouping of people performing similar activities. I will give you an example: let us say whenever you go to hospital you will see that there is orthopaedics department, you have got pediatrician department, you have got let us say gynaecology department and so on. So, in all those departments you will find doctors having similar qualifications.

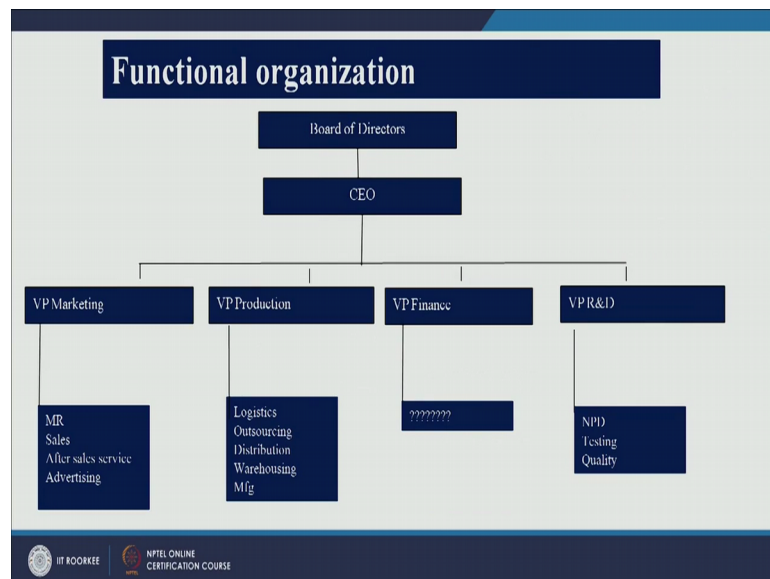
The other example can be workshop technology; you have studied in first year of your engineering. Then in workshop also you would have seen that you have got different shops, you have got metal cutting shop, you have got fitting shop, you have got foundry shop and so on. So, in all those shops you will have similar type of people working in those areas. So, that is functional organization.

The other extreme of functional organization is called project type organization. It is totally different from functional type of organization. So, grouping people into project teams on temporary assignments; as I said project is a temporary and (Refer Time: 11:09) at the end of the day.

So, we will see other points related to project organization. And in between these two you have got something called matrix organization. So, here we create dual hierarchy in which functions and project type organizations have equal prominence. So, we will see these types of organizations in detail.

So, let us first take functional type of organization. So, at the top you have got board of directors in an organization.

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And there is a CEO here, and there are several vice presidents. So, you have got vice president let us say marketing, finance, HR, purchasing, let us say you have got R and D

and so on. Now all these vice presidents would work differently they there would not be much interactions among them.

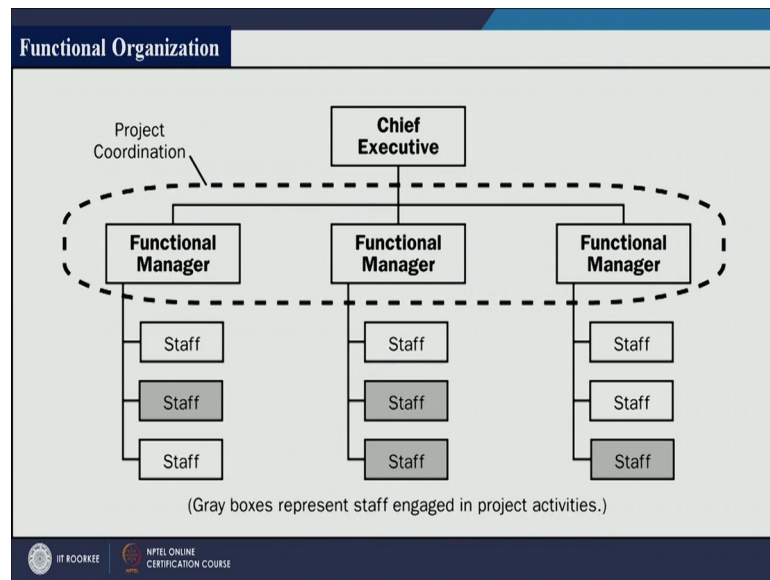
So, that is a problem of this type of organization. In fact, VP marketing would not be knowing what VP production is doing are the vice a versa. So, let us say for example, VP marketing would be looking after marketing related activities: starting from marketing research to sales to distributions to geography of customers whether you want to launch new product, or not if you want to launch new product then for which market for which segment and so on. So, all these things would be looked after by marketing fellow.

On the other hand you have got production fellow who is looking after manufacturing of products, different master production schedule aggregate production plans and so on, my MRP and so on. So, these things would be looked after by VP production. And you have got VP R and D. So, this fellow would be focusing more on a new product development, testing of those products, quality inspection and so on.

Similarly you can have VP finance. So, can you tell me what kind of activities VP finance would be doing? So, just next 3 minutes you should come up with at least one or two activities which a VP finances would be doing. VP finance. So, let me tell you what kind of activities VP finance should be doing. So, he should be arranging what would be the sources of funds, what would be the let us say interest rates, what would be your return policy, how to swap a higher interest loan with lower interest rate and so on.

So, these kinds of activities would be done by VP finance. So, this is a typical functional organization, where each of the departments is doing its own function, there is no interaction amongst them. Another slide on functional organization: so you have got chief executive, so you can have again different functional managers, like in previous slide we had different vice presidents.

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So, you can have functional manager let us say purchasing, functional manager quality, functional manager production and so on. And if they are doing a project, so all fellow who is working with let us say functional manager marketing. So, this fellow would be involved in a project. Similarly two people from let us say some other functional areas let us say purchasing, so these two would be involved in a project.

So, gray boxes represents staff engaged in project activities. Similar to previous slide, but slightly different in terms of people who are involved in project activities.

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Functional organization	
Strengths	Weaknesses
No change is required in firm's design	Siloing – difficult to achieve cross functional cooperation
Enables the development of in-depth knowledge	Lack of customer focus
Allows for standard career paths	Long time – due to structure problems, lack of ownership , slower communication
	Project may be sub optimize due to varying interest or commitment

The table provides a summary of the strengths and weaknesses of a functional organization. It includes logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE at the bottom.

Now, let us look at what are the strengths and weaknesses of this type of organization. Generally, these types of organizations you will find in government set up, where you have got different ministries. Let us say if you talk about central government level you have got a HRD ministry, you have got defence ministry, you have got finance ministry and so on.

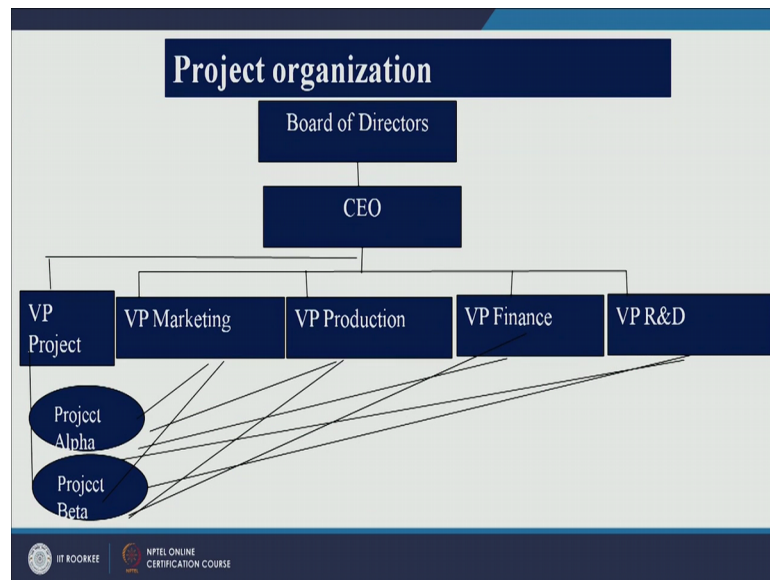
So, they most of the times work separately, there would not be much interactions amongst them. So, if you look at strengths then I see there is only one strength that the employees will have in depth knowledge of what work they have been doing. But there are several problems, and because of these several problems which are listed here you have got a different kind of organization structure it is called project type of organization structure.

So, if you look at weaknesses of this particular type of organization structure then you have got siloing effect every. Every department is working for itself; it does not have to do much with the objectives of the organization. So, they try to just focus on objectives of the department only. So, you will have lack of customer focus in this type of organization structure, because nobody owns customer in such type of organization. So, customer would be moving from one place to another and so on. So, there is no ownership of the customer in this type of organization.

And of course, there will be a slower communication process across these departments, because let us say if the tier three level employee of ministry a he wants to talk to tier three level employees of ministry b then the employee of ministry a he will have to talk to tier one and then the information will go to tier one of ministry b then tier two and then it will go to tier three.

So, these kinds of problems generally will be there in this type of functional organization. And because of these things you will have sub optimize of the project, it will never be optimized. So, you will have at the end of the day sub optimum result for a project. So, these are couple of weaknesses.

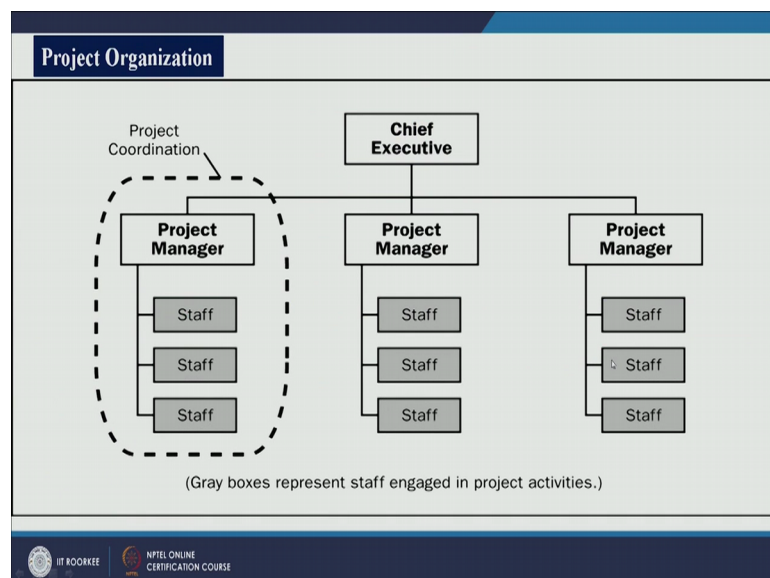
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Lets us look at the other extreme of organization structure which is project type organization structure. So, here you have got board of directors and CEO, then you have got different vice president: marketing, production, finance, and R and D, but here you have got a separate vice president for projects.

So, this fellow is looking after different projects of the organization. So, you can have different project for example: project a project b projects c and so on. So, in each of these projects you will have people from different areas different disciplines.

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Similar type of slide; you have got chief executive at the top, different project managers, and all these are looking after a particular project. So, in a project you will have people from all other areas and they would be reporting to project manager. So, this is the beauty of this type of organization structure. What could be the strengths and weaknesses of this type of project organization? Can you think of anyone, any strength first? Can you think of any strength or if not strength can you think of any weaknesses.

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Project organization	
Strengths	Weaknesses
Assign authority to solely project manager	Setting up of maintaining teams can be expensive
Improved communication – across functions	Loyalty to project not to originations
Effective and speedy DM	Difficult to maintain pool of intellectual capital
Promotes creation of cadres of PM experts	Concern @ future after project gets over
Rapid response to market	

So, let me tell you the strengths of this type of organization structure. In this type of organization structure you have got single authority who is responsible for project completion and that fellow is nothing but project manager. And in this type of organization you will have a better communication across all the functions of the organization. You will have to see effectively and speedy decision making process compared to previous type of organizational structure. And of course, you would be able to respond in a better way to market requirements. So, it is good to have project type of organization, but there are certain weaknesses also as far as this type of organization structure is concerned.

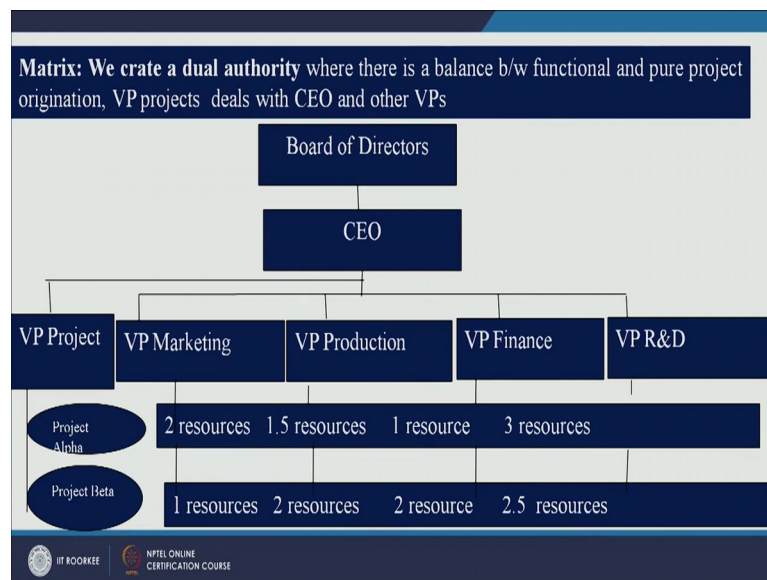
In a project as I said project is a group of heterogeneous people. So, you have got experts from different departments and those experts, those team members will have different qualification levels, they would have different cultures, they would have different languages, they would have experience of working at different projects. So, it is very

difficult for a manager to maintain such a team of experts. There will be always problems of ego, there will always be problems related to superiority and inferiority. So, it is difficult to maintain such a talented pool of experts. So, to maintain such a pool it is expensive; you need to pay much much more money than what you should usually be paying.

Then the other problem here is you have got loyalty to project not to the organization. So, the project team members would be loyal to the project. They will not bother about the activities the work of the department from which they originally belong to. So, there will be loyalty towards project not towards organization. And most of the team members they always keep thinking about what will happen to their future once this project gets over. So, these are couple of weaknesses which one should look.

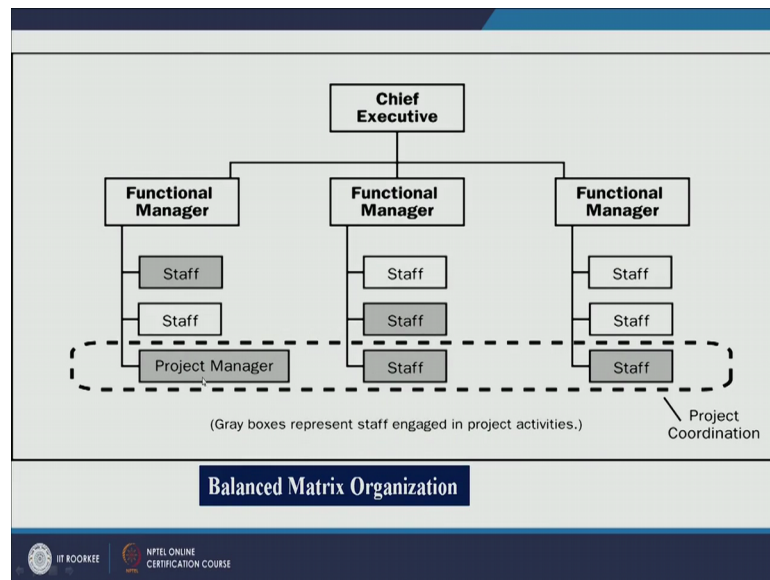
Now if you look at the third type of organization structure which is a combination of functional and project type organization structure, it is called matrix type of organization structure.

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So, here we create a dual authority where there is a balance between functional and project type organization. So, vice president project deal with CO and other VPs. So that is the beauty of this particular type of organization structure. We take the benefit of both functional and the project type organization.

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So, here is another slide which is similar to the previous one. You have got different functional managers and there is a project manager who is and these staff members are working with this particular project manager. This called Balanced Matrix type of Organization.

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Matrix	
Strengths	Weaknesses
Suited to dynamic environment	Two bosses
Emphasizes the dual importance of project management and functional efficiency	Sometime difficult to share resources
Promotes coordination across functions	Frustrating – caught b/w project and functional requirements
Use of scars recourses on competing basis	

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Now, can you tell me what are the possible strengths and weaknesses of this type of organization? First you think of strength and then weaknesses, I give you 2-3 seconds.

So, hope that you would have noted down at least one strength and one weakness. So, let us go with strengths first.

So, matrix type of organization structure is suited to dynamic environment, because environment is very dynamic these days things are changing very rapidly. Customer needs products at shorter time; they want products with different features. And because of all these things situation is very dynamic. So, this kind of matrix is able to take care of dynamic environment. It promotes coordination across functions, use of scarce resources on competing basis.

So, as far as resources are concerned you will always have limited resources and those limited resources are to be distributed amongst different projects of the organization. And that is again a difficult task. So, there are several priority rules which we should follow for distribution of limited resource amongst computing projects. If you look at weaknesses then in this type of project you have got two bosses. So, you have got your project manager is your boss and your functional head or functional manager is also your boss. So, you are always working between two bosses. So, whom to listen at the end of the day: so that is a weakness.

So, sometimes it is difficult to share resources and it is sometimes frustrating because you are caught between project and functional requirements. So, whether you should fulfill the requirements of your own department first or you should fulfill the requirements of project. So, these are couple of weaknesses of matrix type of organization.

So, if I ask you out of these three which is the best. And of course, you should also be knowing why that type of organization structure is best. So, there is nothing like best or worst it depends on what kind of project it is. Where you are doing that project, what kind of technological support you are looking for that project, what kind of people you are having with you, what kind of resources you are having with you. So, you need to look at all these things and then you should come up with a particular type of structure.

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Project Characteristics	Functional	Matrix			Projectized
		Weak Matrix	Balanced Matrix	Strong Matrix	
Project Manager's Authority	Little or None	Limited	Low to Moderate	Moderate to High	High to Almost Total
Resource Availability	Little or None	Limited	Low to Moderate	Moderate to High	High to Almost Total
Who controls the project budget	Functional Manager	Functional Manager	Mixed	Project Manager	Project Manager
Project Manager's Role	Part-time	Part-time	Full-time	Full-time	Full-time
Project Management Administrative Staff	Part-time	Part-time	Part-time	Full-time	Full-time

Organizational Structure Influences on Projects

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This is really an important slide which talks about all three types of structures. You have got functional type of structure; you have got project type of organizational structure and in between this matrix type of organization structure.

Now, if you compare these three structures on the basis of these criteria, then when you say who is if you look at let us say this project manager's authority? Now in which type of organization structure the project manager will have more authority? Clearly in project type of organization structure. is not it. So, the authority would be almost high to total authority. But in functional type of organization you very little or none authority. If you look at resource availability project manager will have full control over resources. And in case of project type of organization, but little or none controlling functional type of organization.

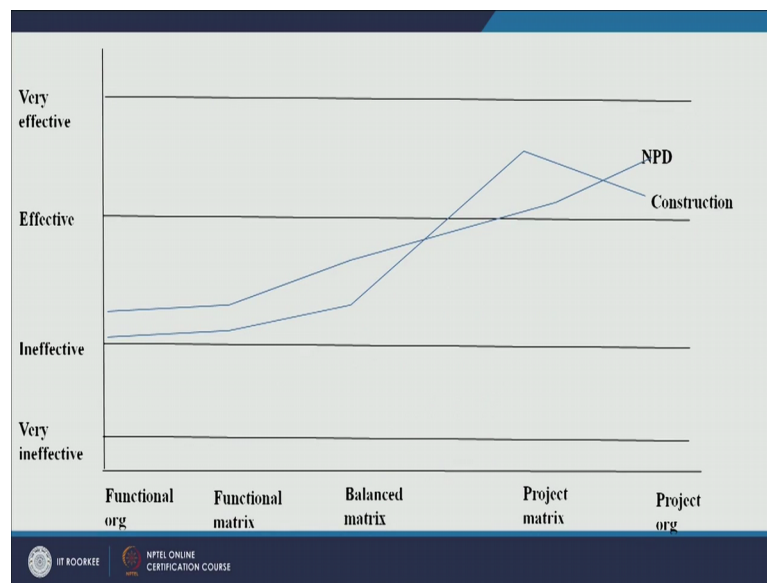
Who control budget? Of course, project manager controls budget in case of project type of organization. And here the functional manager will have control over budget. Project manager's role part time in first case and full time in project type of organization; and project management administrative staff would be part time in this case and full time in this case.

So, if your organization is let us say having most of the features similar to project type of organizational structure you would be calling it strong matrix type of organization structure. If your organization has got most of the features related to functional type of

organization structure you will call it weak matrix, and there is something on balanced matrix. So, in a way you can say that there are five types of organizational structure: you have got functional, weak matrix, balanced, strong matrix and project type organization.

And as I said this organization structures do affect success of the project, because in project you need to make a decision making and decision making depends on again number of levels span of control and so on. So, let me move on to next slide.

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Now this is basically a slide wherein you can compare what kind of organization structure is suitable for what kind of business. For example, if you are going for let us a construction type of business. So, what kind of organizational structure would be suitable for construction type of business?

So, actually it depends again on several things, but if you look at this particular slide we say that for construction type of business project matrix type of organization is best suited. If you look at let us say new product development type of R and D type of department what kind of organization structure is suitable, then you need to have project type of organization structure. So, the type of organization structure which your organization is having depends on what kind of business you are doing. You can also come up with what kind of let us say businesses would be suitable for functional type of organization structure. So, you can always do such type of research work.

With this let me summarize what we have done in last 30 minutes. We have seen organization structure, we have defined organization structure, we have seen different types of organizational structure, functional project and matrix type of organization structure. And with this let me complete this particular lecture.

Thank you very much.