

# **Project Management: Planning, Execution, Evaluation And Control**

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Welcome to the course Project Management Planning, Execution, Evolution and Control. I am Professor Sanjeev Choudhury from Indian Institute of Technology, Kharagpur. We were continuing module 4 that is defining the project. In this lecture, we will be discussing the responsibility matrices and project communication plan. Before that, we will be completing the rest of the organization breakdown structure and the coding of WBS which were left for the from the last lecture. The concepts that will be covered in these lectures are, so these three we have already done in the previous lecture.

So, in this lecture, we will be integrating the work breakdown structure with the organization breakdown structure, then coding the WBS for the information system. Then we will be developing what is the responsibility matrices, then project communication plan. So, these are the these are the project communication plan, these are the concepts we will be cover in this lecture. So, integrating work breakdown structure with the organization structure, we have seen in the last lecture that how we have hierarchical breakdown of the project to its smaller and smaller units.

And the last level of units is called work packages. Work packages are the lowest level of work breakdown structure. Now you may ask to how do you know we have come to the last level, what is the specific the last level, what is the norm? There is nothing called norms and all, it depends on your convenience, on your work experience. Usually empirically it is found that the work breakdown work packages should not be taking more than 8 to 10 percent of the entire project scope and it should not be less than 1 to 2 percent of your entire project scope. So, it may be depending on the duration of the project, it may be in hours, it may be in days, it may be in weeks, it may weeks.

So, these are the work packages, this is the lowest level. Now the what is the organization breakdown structure? Now in the organizations also you can break it down in different groups, different levels and all. Suppose these organizations have this design, quality control test, production, outsourcing. So, these are the, so the intersections of the work packages and the, that is work breakdown structure and the organization breakdown structure, intersections are the, your responsibility point and here you assign a person or a group from this group, say cost accountant is for, is assigned for that, he is responsible for it, for completions of this. Similarly, for quality control, say for here these are the assigned responsibility points.

This way you can, this work breakdown structure can be integrated with the organizations structure which will give you the who is responsible for what and it to steer through. These are very important. So, this is the step 4. Thereafter what you do? We go to the step 5. Step 5 is the coding work breakdown structure for your information system.

Suppose a big project, it may have thousands of activities, thousands of work packages. So how do you monitor? You have to put it in your computers, you have to, these thousands of tasks or activities or work packages are coded, you know, you give a coding. This coding, then this coding, what happens? Like say this is the project and this 1.1, that is the one indent you, you write indent 1. So, these are the major deliverables 1.

1, 1.2, then there may be the many sub deliverables. If you go this way, you can see here these are the sub deliverables. Say CPU under that, this is sub deliverable touch screen. Then these are the further work packages, you know, these are the work packages.

So, 1.2, 0.3, 0.2, 0.1 work packages. So, this way when these work packages you roll it up, so you get different levels at different management level, different people will be responsible for it.

And when you roll it up, we know what packages is having assigned certain time, cost, resource material, equipment, people. So, you roll it up and you get a bigger picture and you go up. So, this is the coding of WBS for information system. Any project

management, project management software you can do it very efficiently and very easily. It defines, coding system defines your levels, elements, budget, cost information, consolidations of report, it helps it.

Then we talk about the PBS. What is PBS? Is the process breakdown structure for generally used in software development project? You know that there are two types of project, say traditional project or the build project, you can design, you can design that project, build and design, that project these are tangible projects. Here you can very well, the deliverables are very specific and you can identify the deliverable. The project scope, scope is very clearly stated, but some projects for which scope is not ready upfront.

You do not know the new product or a new software project and all, what the scope will become that you are not aware of it upfront. So, what you do? Here these are called, you do not do that based on the different deliverables. Here your outcome comes in phases. Say first level is the major phases. Phases are saying software project or where your project scope is not very specified, is not known upfront, then you do it phases.

First you do the analysis, second phase 2 is the design, phase 3 is the construct, phase 4 is the testing, phase 5 is rollout. So, you go in phases. Now each phase may have their deliverable. Each phase what you do? You do its iterations and you come up with some outcome, some deliverable, say design, say the design phase. The design may have, second level activities may have defined user interface, developed technical design, established quality, developed detailed design.

Again, this may have further third level activities, defined application structure, defined processing flow. These are the third level activities. That means here each phase may have their own deliverables and it can go downwards. So similarly, other phases and downwards. So, the outcome of this phase, say design phase will become outcome, that is the, will become the deliverable, that deliverable becomes the input for the construct phase.

So, the construct phase also can have different levels. It can go downwards and different levels and whatever will be the outcome or deliverable of construct phase will

go as the input for the testing. So, what happens? This process breakdown structure, you go phases and each phase may have their, can go downwards level wise for their deliverables and that deliverables become the input for the next phase. So, this is also called waterfall method in, in software project management. So, this is also referred to as, as I told waterfall method.

So, this is the PBS, process breakdown structure. It is generally used in software project and the projects where your project scope is not firmed up, upfront and are, is somewhat difficult to perceive, perceive. So, this is all about project breakdown structure. Then we will talk about responsibility matrix. What is responsibility matrix? Responsibility matrix is also called a linear relationship chart, means who will do what work that you have to assign.

What you do in a project? First you divide the tasks. There are many activities or the tasks, those are the work packages. So, the n number of activities are there, tasks are there. Now your project team consists of say a, a, a number of people. So, who is responsible for what and who will be the supporting or assisting, R and S.

So, you assign it. So, this is called responsibility matrix. This is a simple responsibility matrix. It has further, can be modified and more usually in the real life you find more advanced one for the, this is called Racy matrix. What is Racy matrix? It is R is responsible, accountable, consulted and informed. This matrix, say suppose these are the project, these are the major deliverables, these deliverables and these, who is responsible for that, who is accountable, you have to identify.

So here responsible are those who do the work to achieve the task or deliverable, that is the say project manager. Say project manager is responsible for creating the project charter. Then accountable is the, who is the approver, who is the approving or sanctioning authority. He is generally the accountable for completion of the project. So usually accountability is the, for project charter is the project executive or the sponsor.

So, you can assign it. C is consulted, those whose opinions are short and with whom where there is a two-way communication. Say here for a project charter, project stress

steering group is consulted and the I am the informed, those who are kept updated on progress of the, of a, on completion of the task or deliverables and with whom there is only one-way communication. Say project team is the, is informed for this charter, is one-way communication. Similarly, for all these, you know, for these deliverables and all, you can, you must do a RACI matrix, that is who is responsible for that deliverable or the task, who is accountable, who is, who is to be consulted and who is to be informed.

This is called RACI matrix. Then we will be talking about project communication plan. Project communication plan, one is a very important thing and the good companies generally develop the communication plan because it has been empirically found that the failure of the project is more often due to the absence of a good communication between the different stakeholders. So, the communication is an important aspect for success of the project because a project needs the help of different stakeholders and these stakeholders are to be kept in the loop and they should be continuously feed with the information what is needed for them. So, what is the purpose of communication? As I told you, the, what the major things are what to communicate and whom to communicate. These are the major two questions you should ask.

So, what, who, how to communicate, when to communicate and what are the information's to be communicated and this you have to plan. For this you have to develop a communication plan so that it is very systematically done. It should not be done on ad hoc basis. The first thing for this you have to, what you have to do? You have to do a stakeholder analysis. What is a stakeholder analysis? A project has different stakeholders.

So, you have to identify those stakeholders and you have to group them, what are their need so that you should feed them with communications, with information particularly to that. So, for that stakeholder analysis is very important. This is the stakeholder communication. What it is? Suppose you can divide the stakeholders with two criteria or two categories. One is the power the stakeholders wield, that weld, that is high power or low power that and the interest of the stakeholder, it may be high, low.

So, a 2 by 2 matrix has been created on the power of the stakeholders and interest of the stakeholder. Suppose if you see here, here these stakeholders AD, these stakeholders are

high power, they have high power to damage or to facilitate your project, but they have low interest. So, who are these people? Any idea? Generally, these people are the project sponsors or the senior management. They are having huge power to facilitate your project. Your sponsor can give you the political support to come over the obstacles and all.

Also, the senior management, powerful people, directors and all, if you do not keep them in good humour, they can jeopardize your project. So, you have to keep satisfy them with the information. They are not interested for the project that very is low. So, you should keep them communication, feed them communication, not too details. It should be, they may be interested to know when the, what is the status of the project, is it on time or it is late, it is over budget or under budget, that sort of thing.

If you feed them too much of details, it may irritate them. Then this group of people, you know, you, these stakeholders are having high power for the, for managing your project, for your project and the interest is high. Who are these people? These people, high power, high interest, you have to manage them very closely. This may be the functional managers who are closely associated with your project. Suppose logistic manager or the engineering manager, it is aligned for your project.

So, they are very crucial. So, you have to keep them in good humour. You can, you should feed them with adequate information and also the project team, project team, they are doing the project. So, you have to manage them closely and the adequate information has to be provided. So here this quadrant, who are these stakeholders? They have high interest but low power. For them you keep informed, not much of information, keep the broad information.

Who are these people? These people may be the trade unions, collectives and also maybe the functional managers of other groups who are not very much connected or closely connected with your project. You have to keep informed and this another group of stakeholders will fall here. They have low interest and low power. So, you provide them the general information, nothing much. So, who are these people? These people may be the say legal, then corporate communications or the vigilance, say different departments and all or but it always depends the stakeholders, customers and all depending on your project and all you can put these stakeholders.

Once you identify the stakeholders then what you do? You have done the stakeholder analysis. Next is the what are the information needs? What is the information's you will feed? You have to identify the information that are to be shared. The information's for the project may be the status report, milestones report, then the maybe the scope changes if any, deliverable issues, it may be the change request, the project the scope change request, team meeting, action items and the gating decision. So, we will be discussing

more on in the last chapters and all. So, these are the generally the information's that are to be communicated to the different stakeholders.

We have to identify that. After that information needs what you do? You find out what are the sources of information where from you get all this information. These information's are generally obtained from where generally obtained from say team meeting or the say reports or the minutes of the meeting or the PMO program management office or the different functional groups. So, sources of information you have to identify and collect it. Once you get the sources of information you get it, then next step is the what should be you have to develop or fix up, what should be your disseminations mode. Disseminations mode nowadays with the advanced in the IT technology, it may be through email, it may be through SharePoint, it may be through publications in the monthly report, quarterly report and putting up in the intra company that website.

So, these are the or it may be through letters. So, these are the different disseminations mode available to the project team. Then responsibility and timing, like who will be responsible for disseminating these information's and at what frequency, at what timing you should do it. So, responsibility of this to be fixed and timing whether it should be weekly or it should be bi-weekly, it should be monthly, quarterly you have to make it. Now I will show a practical real life say the how Shell Oil Research Project communication plan works like. So, this has their communication project, communication plan.

Say what information's target audience, when to send that is the frequency, method of communication and the provider and the provider of the communication. So what information's are to be that we talked about it are to be given say milestones report, project status report, team status report, issue report, escalation, outsourcing performance, oversight get decision, these are the information and target audience are given. Say senior management, staff and customer, project manager, staff and customer all are given. When it may be bi-monthly, weekly, whenever as and when needed, anytime as required. So, method of communication it may be email or hard copy, meeting and hard copy all these.

Then the provider, may be the project management office, project manager, team recorder, design department. So, this way it is fixed, this is an illustrative one, you can also make it up. So, another main important thing for this is here if you have a project communication plan, it is a good practice for your organization because instead of here

you are becoming proactive, instead the people, different stakeholder asking for the information, what you are doing, you are controlling the flow of information, you are controlling the information. Like if you are publishing it say weekly or monthly and all, people will be waiting for it, they know it is coming, they will be waiting for it. Even the senior management will be very comfortable because they do not have to push through different groups or different people and all to do the jobs and all.

If it is published periodically, the people know what are the status and what they are supposed to do it, so you are controlling the information flow. So, it is beneficial for you and also it gives the transparency to the organizations. So, this is a good practice to have a project communication plan so that your stakeholders or the clients or any important stakeholders are not found or the caught in surprise if something happens, some eventuality happens. So, this is there. So, to sum it up what we have discussed in this lecture we can say the in continuation with the last lecture this class we have discussed the remaining steps in defining the project namely integrating WBS with the organization and coding WBS for the information system.

Then it further explains process breakdown structure which is often used for process-based project with ill-defined deliverables. It is generally used for the software projects. We have discussed it. Further the need of responsibility or RACI matrix, the importance of stakeholder analysis and developing project communication plan for the success of the project have been elucidated in this lecture. Now these are the reference books you can go through and enhance your knowledge and clarify your further queries and all. Thank you very much for attending today's lecture.