

Project Planning & Control
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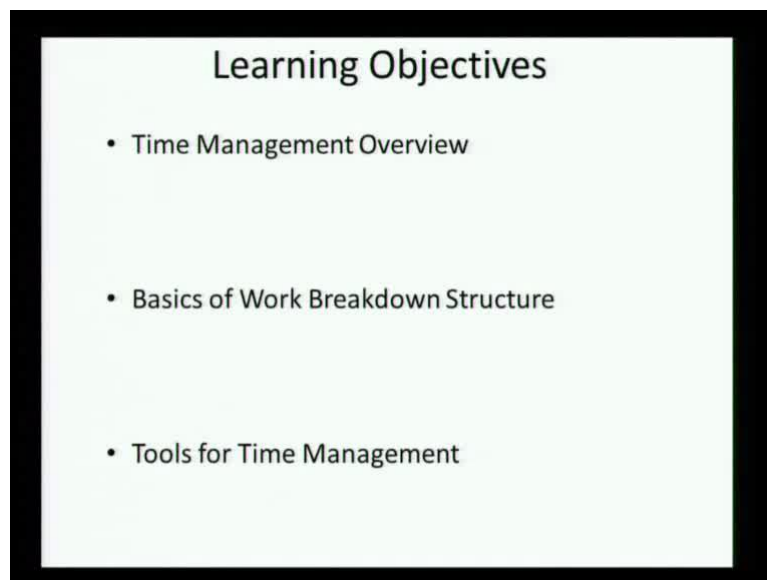
Lecture – 07

Week - 02

Time Management, Work Breakdown Structure (WBS), Gantt Charts

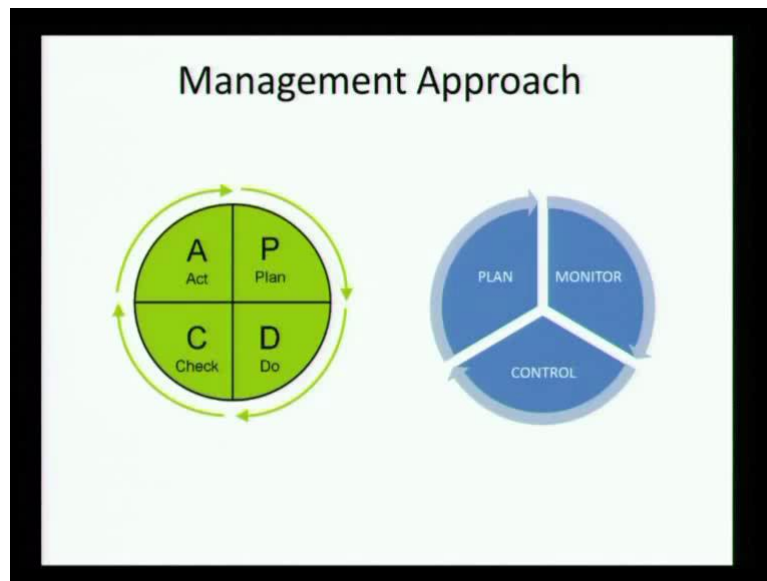
In this lecture what we are going to cover is Time Management and WBS, WBS stands for Work Breakdown Structure.

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We look at the objectives of this lecture, we will first look a little bit at time management, specifically from the standard and get an overview of what are the various elements of time management, look at the basics of work breakdown structure and then, look at some of the simple tools which are used today for time management. And in the next lecture we will go on to more sophisticated tools and as we know a lot of these sessions will be on the time management tool.

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Now, I would like to take you back to what we discussed in the first few classes as to plan, monitoring and control or the PDCA cycle. Now, do you have to recall this? So, what was the example we discussed when we talked about the plan, monitor, and control? So, I gave you an example where we are traveling from, say IIT campus to Chennai and how you can plan, how you can monitor and how you can control. So, what were the tools we use there?

Student: Bike

Is that the tool?

Student: No, once time...

One was, what did you use to plan and what did you use to control.

Student: Google maps

Google maps are used to plan. Yes, what is used to control?

Student: Time, watch

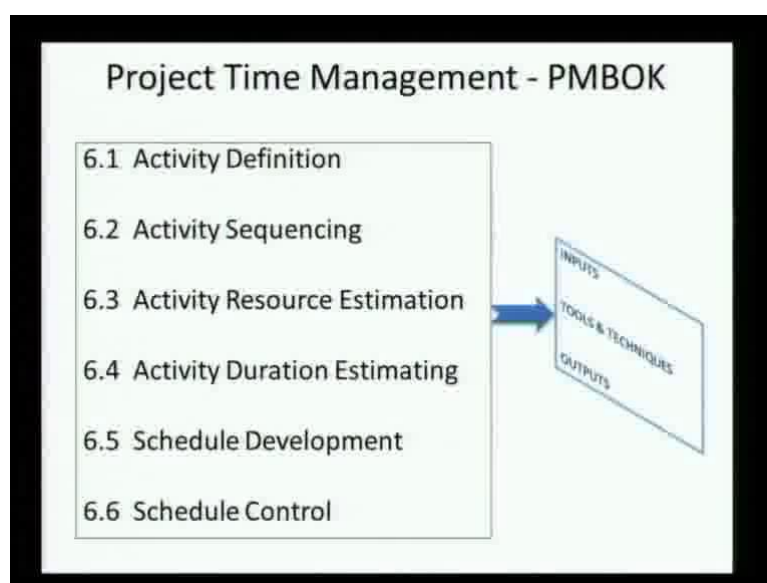
Watch and you need some kind of milestones or locations. So, the same concept applies to a construction project or project management also.

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If you go and look at what planning is, it is basically developing a strategy for executing a project in order to meet project objectives; it is extremely important. Do is the executing project with the intent to meet the objectives, monitoring and this is where the important phase starts in terms of the feedback loop. Gathering data on actual project progress and comparing with the plan to evaluate complaints to the plan and control or act is decision-making on interventions required during the execution of the project to keep the project on track in order to meet objectives. So, this is what we call the complete cycle of, how we need to, do to manage a project.

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Now, when we go into the time management aspects specifically, we have to apply the plan

do check act or the plan monitor control cycle here and you can see that, in the project management body of knowledge, you can see the project management body of knowledge. These are the subclasses in the time management clause. So, clause 6 is time management, and you can see that we have activity definition, we have activity sequencing, activity resource estimating, duration estimating, schedule development, schedule control. So, these are the basics of time management.

Now, the way the PMBOK defines, you discuss it, you have various inputs, different tools and techniques and the output per each of this clauses. So, what I would ask you to think about is, if we take these six clauses which of this is planning, which of this is monitoring, which of this is control. Planning will be what?

Student: 6.123

6.1234, even 5 is the plan. So, you will find most of it comes into the planning side, the monitoring and the control is actually 6. So, when we come, when we actually talk about the control you will find that control is really based on project, project requirements. So, we might not be able to give us specific detail standard for it, but 6.6 talks both about the monitoring and about the control part, whereas you can see the amount of information given in planning, amount of steps in planning it is far more detail.

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ACTIVITIES..ACTIVITIES..ACTIVITIES

- Project is made up of activities
- Completion of all activities ensures completion of project
- Key Step – Identify Activities!
- How ?

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graph TD;
    problem(problem) -- split --> subproblem1(subproblem);
    problem -- split --> subproblem2(subproblem);
    subproblem1 -- split --> compute1(Compute subproblem);
    subproblem1 -- split --> compute2(Compute subproblem);
    subproblem2 -- split --> compute3(Compute subproblem);
    subproblem2 -- split --> compute4(Compute subproblem);
    compute1 -- merge --> subproblem1;
    compute2 -- merge --> subproblem1;
    compute3 -- merge --> subproblem2;
    compute4 -- merge --> subproblem2;
    subproblem1 -- merge --> solution(solution);
    subproblem2 -- merge --> solution;
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Now, one of the critical aspects, when you look at planning, is, everything is made up of activities. So, if you look, go back to the clauses see activity definition, activity sequencing, activity resource estimating. So, the key to what we are doing in the planning phase

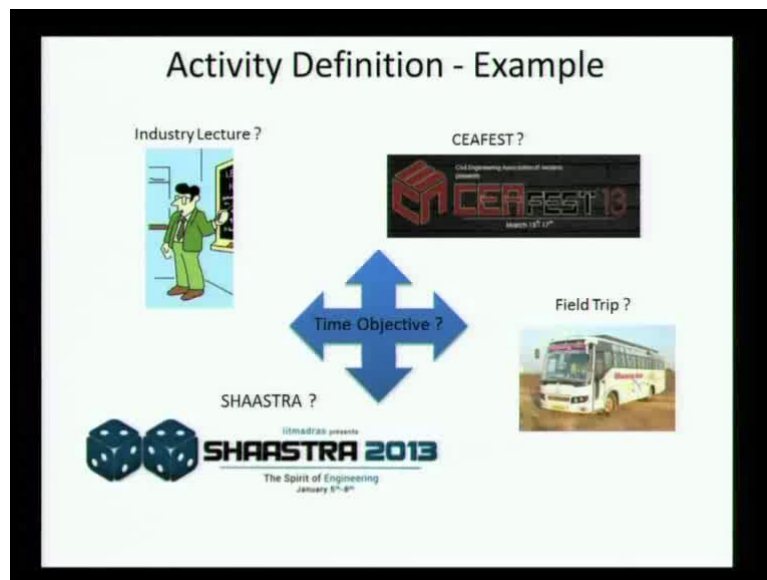
especially is on activities. So, we really have to get used to this term activities, because that is what a project is finally made up of, that is what we look at a project, and we say, we look at a project as it is, we look at it comprised of multiple activities and what we have to do is to be able to identify all the activities, which is a key step and this complete...

If I take a project, break it down to it is activities and make sure all activities are completed, I basically took care of the project and as you can see in the graphics here, this is a very common problem-solving approach. So, you have a problem, you divide it into subproblems, you then divided into further subproblems, you solve all the subproblem put it back together, and you get the solution. Any idea on what this kind of approach is typically called?

Student: Work breakdown structure

Work breakdown structure is one of the steps towards it. The breaking down is, but there is a more common term. It is called divide and conquer. So, we have all heard about this; it is commonly used, so you basically dividing something into small tasks, taking care of the small things and then putting it back together and you know it is a common concept and approach we used for complex tasks. So, the project is complex, we approach it by the divide and conquer approach.

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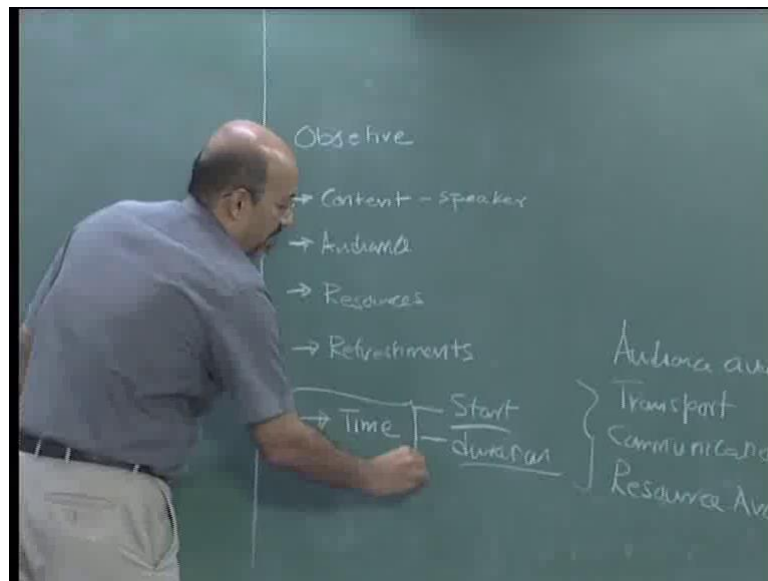


Now, here we have some examples of what I would say common projects for you, you can relate most to this, whether it is an industry lecture, whether it is organizing a CEAFEST or whether it is a field trip or whether it is something like Shaastra. What I would like you to do is to think about, what... Let us take industrial lectures; it is a fairly simple exercise. What do

you think are the activities you would like to, what are the activities that come to mind when you are organizing an industrial lecture.

But, before I get to the activities let me take a step back, is time what are the objectives of an industrial lecture. Let us take industrial lecture as a project. What are the objectives of an industrial lecture? I want to use the board here, can you tell me... I mean all of you have organized industrial lectures, what you think as an objective for an industrial lecture.

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Student: A perspective from the industrial side instead of the normal acted ((Refer Time: 07:21))

So, I am calling it content. What are the other objectives?

Student: Motivation and inspiration

I would say that part of the content, I am using it as a part of the content.

Student: Time

Time, so what about time? I do the industrial lecture; I schedule it at 5 o'clock, the Speaker everything, I mean what. The speaker comes at 9 o'clock, is it objective met? no. I schedule the industrial lecture at 5 o'clock, I go, the room is not available. So, we see time is an important part of achieving an objective to the industrial lecture. Is there any other, other than time let us come back to time, but what are the other objectives you could get.

You want an industrial lecture and lecturer, and you will own, yes you want an audience, what else do you want.

Student: Speaker

Speaker, content speaker.

Student: Resources like a projector.

You want I am putting resources like a good projector, classroom, and ambiance, everything else. Anything else?

Student: Transportation

Transportation, is it an objective? Is it an objective or is it something that achieves an objective? Is your objective to get really good transportation for use, is that an objective, No, it is something that you have to do to achieve an objective. What about food or tea or coffee, is that an objective or not? No, will your customer, who is your customer.

Student: The audience

The audience is fully satisfied with just food for thought or with any other kinds of food. So, we will say refreshments, and I am now putting the last one as time. So, you know that even if all of these objectives, there might be more objectives we can think of, but I just want you to go through the exercise of kind of listing that even when you look at a something like a guest lecture, there can be a serious of objectives you have to meet and if you list those objectives and then you start finding, how you are going to meet the objectives you are going to have a better chance of doing so.

Now, I put this objective of time. In how many dimensions are time important, I am kind of using the word dimensions intentionally. What are the aspects of time that are important for this industrial lecture?

Student: Starting time, duration...

Yes, so if I take time, you need start you need the duration, so these are critical, you have to start at the right time you have to end time. Now, in order for you to start at the right time, what are the other activities which are important.

Student: Transport

Yes, transport, so I am going to kind of listed out here, there is transport. What else? This is more brainstorming, I am not trying to do any structure to it now, I am just going to what else is important. You want to make sure things start on time, what else is important.

Student: You have intimate the speaker...

Yes, transport is important, communication.

Student: Time for setting of resources.

Yes resource availability, you have to make sure. I mean you cannot assume that the hall is free, I just walk into it. You have to make sure that is available at that time. So, you have resource availability.

Student: Audience availability

Audience availability and communication, so again you will find that one of your critical parameters here is time, the objective is time and meeting time is so important, and if we start listing down, you will find that... For example, now what is the activity you do, so we are going to trying to now break up your project into objectives and objectives into at deliverables, and then, the deliverables have to be have... There are certain activities which are to be done to achieve the deliverable.

So, let us take a little further, I can go to the next level, I take audience availability. What do I have to do? How do I ensure audience availability?

Student: Publicity, admin the schedule such that feasible hours.

Yes, I go for clashes. So, you know clashes are given good communication, I would you know might be do long term communication then short term communication. So, this is again lot of activities which go into organizing this industrial lecture. Now, are there any... So, the point I wanted to make here is you can take this, start breaking it down, it dividing and trying to take each bit and manage it separately, we can assign responsibilities to people, we can do so many things around which might be things are getting done without a very formal structure, might be we are already doing it, but this adds formality to it.

Let us take, why do you think among the other three are the next simpler one to organize. Field trip, which is simpler to organize a field trip or industrial lecture, probably it is very simpler, field trip has a lot of external work. So, I am sure you can go in the same manner and start saying, what are your objectives and then start organizing a field trip. Is time important in a field trip?

Student: Yes

Yes, very important. Time is one of your primary objectives, starting time you know ending time when you reach, you know all of these, other things are also important. Let us take something like CEAFFEST, which is the next one. How is time important in CEAFFEST?

Student: ((Refer Time: 14:43))

Time is critical from many perspectives. Now, what are the... So, now I come to the question again, what are the dimensions of time that are important, what are the dimensions of time that is little different from industrial lecture to CEAFEST.

Student: There are multiple deadlines

There are multiple deadlines; there are multiple days, multiple events, multiple starts, multiple finishes. If those finishes do not finish properly you cannot start other events, so it is more complex, more dimension, more time issues are associated with it, but I mean very similar to Shaastra. Again complexity just increases, but the most important part of this exercise is the fact that time plays... Time is objective and sometimes we do not realize it, we just go about trying to organize things without that very, very specific focus on time.