Project Planning & Control
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Lecture - 11
Develop a Bar Chart (Exercise)

What I want to do now is to kind of give you are a chance to make a bar chart, and We are going to take two exercises. We will take one from yesterday's class, which is doing the guest lecture. So, can you at least, can you identify five activities, associated with the guest lecture and draw a bar chart, and assume that the guest lecture has to be scheduled 30 days from now. So, the scope of the project is to schedule a guest lecture exactly, 30 days from now, and that is the time. That is when your CEA wants your guest lecture. What are and I want it to be a five activity; I want you to limit yourself to five activities, and I want you to think of what is the kind of bar you are going to draw for each of them. So, we will take a couple of minutes to do this and then I will come back.

(Refer Slide Time: 01:13)
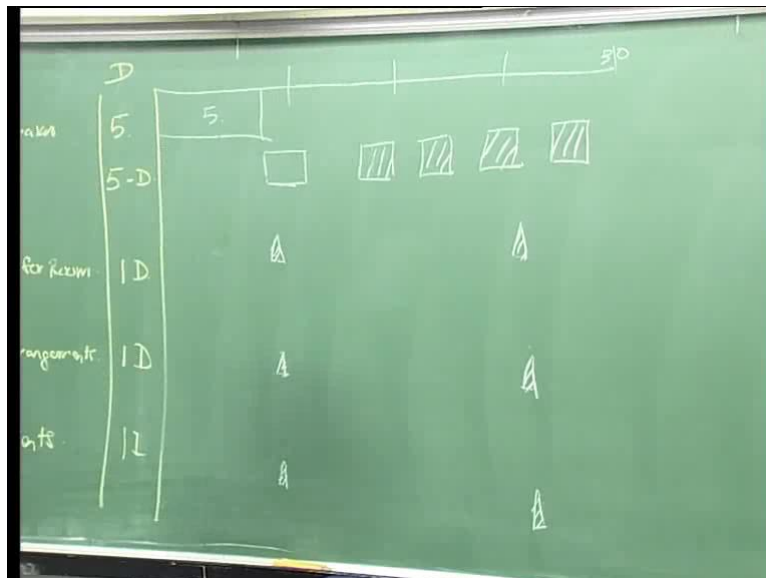
So, first, we will take the activities. How many of you are ready to give me the activities? We will probably, I will get feedback, and we will converge on our set. What are your activities?

Student: (refer time: 01:28) First of all invitation to the speaker, communication to the audience, arrangements, transport, lecture

Now, anyone has something different? (refer time: 01:44)

Student: Finalizing the speaker...

So, probably, I would start with that; you have to select the speaker; so, select I will say, select and finalize.

Student: (refer time: 02:07)

Yes. So, when we say finalize the speaker, when I say select we have we will be looking at making say, five phone calls, finding who is available, because a day is fixed; topic, everything and then, finalizing on a particular speaker. So, this is all contained in that. What would be the second activity?

Student: Inform and publicity.

Publicity for the talk. Three?

Student: Infrastructure bookings (refer time: 02:43)

Make bookings. Four?

Student: Transportation...(refer time: 03:01)

make

Student: If you just take a videography of this particular lecture, then you have to distribute the content again.

So, do you want to say audiovisual arrangements?

Student: (refer time: 03:37) yeah that could be one

You want to make it as audio visual. So, we are talking about videography; we are talking about making sure projectors available, computers; we will leave it at that. We guys now want to refreshments; it is good one. So, these are the priority you get. The room comes with the refreshments; is it?

Student: Yes.

Yes, but it is a different letter; you cannot. So, what is the next thing that is on our mind? What do we have to do?

Student: Duration (refer time: 04:16)

Yeah, we will have to look at. So, let us just put, I am going to put a column here and call this

the duration. So, this is the activity; this is the duration. I am not worrying about; we will be thinking about the sequence; we have to think of sequence also, but let us just talk about duration. So, I want, this is little tricky. I want you to think how are we going to, how are we going to estimate duration one and what do you think is likely duration? Select and finalize speaker.

Student: The time given before the deadline.

Yes. So, you have 30 days.

Student: So, maybe within five days (refer time: 05:01) finish the.

So, you are giving yourself five days. So, remember you are giving yourself five days. So, I am going to put five here. Giving publicity for the talk.

Student: (refer time: 05:21)

So, this is thing actually, you have a buffer of 25 days, but are you going to do publicity on every day.

Student: (refer time: 05:28) to do four times or five times.

So, do you want to put it as 25 or do you want to do it as a non-continuous or discrete bar chart?

Student: non-continuous bar chart.

Yes, you want to do it as a discrete bar chart.

Student: (refer time: 05:45)

Yes. So, now, we know that we need five man-days of 5 days of effort. So, I am just going to put it as 5-D. This is going to be five continuous days. You can assume that yes; you are going to work on five continuous days. Make a booking for the room?

Student: For one day.

One day should be fine. Make transport arrangement?

Student: One day.

One day. Audiovisual arrangements? So, so when you come one day, one day, one day; what is it mean?

Student: It could be done actually anytime.

It could be done, but these are more milestone events, and you have one day; the critical aspect here is the duration does not matter. So, actually, if I am thirty days from here, I could make this on the 29th day. As far as my time management goes it is okay, but would you try to do this on the 29th day? No, because you want to make sure that the hall; it is very likely that the resource will not be available to you if you do it in the last minute. So, you have to decide how many days ahead would you do this?.

Student: 2 days.

Two days, three days again, I mean you take our environment; this is why you guys run around so much. Yes, one week or two weeks is what I would say. Remember, you have I mean, we are going all the way here; you are going to 30 days here. So, if we have, so now, we need to start. So, I am going to take, I am not going to draw this perfectly to scale, but this is going to be five days here. What are we going to do here? When are you going to start publicity?

Student: (refer time: 08:03) after...

Yes. So, at least one day after this, you are going to start one and then, when are you going to end publicity?

Student: Just before this.

Yes, somewhere here you are going to have, and somewhere in between, I am going to distribute.

Student: (refer time: 08:31) if somebody is going to.

No, the question is, are you going to put effort? If you are going to put effort and your resources required; by all means, put it, but if you, I am going to put poster here and then, I am going to leave it, and I do not need a resource to do it, it does not mean. See, when I draw this bar basically, means what? I am committing resource on each and every day. So, a bar chart can also mean more than simply time. So, this is one of the things. If you read the history of the paper, I mean, the paper on the history of Gantt chart, you will see how Gantt just did represent time on it. He represented resources; he represented things like a bonus for people, the productivity of people, lot of things went into his representation. Fine, now, we are now, looking at let us say 1, 2, 3 and this is the end of the 4th week. Make bookings for the room?

Student: 2 weeks before.

So, somewhere here.

Student: (refer time: 09:42) milestone events.

Yes. So, I want to make sure make a booking for a room or it is like, it is almost I mean, does it take a whole day?

Student: (refer time: 09:52)

Right, it only takes half an hour to do it.

Student: But, it should be before after the (refer time: 09:59)

Yes, you know you can do it. So, actually 2 weeks, this is giving an adequate buffer, but ideally, I should just finish it here.

Student: (refer time: 10:12) before the publicity is started.

No, I am going to make a booking for a room. The room is available; yes, you are right. It should be before the, I mean, always you can have publicity with this room or without the room.

Student: Update the publicity

Update the publicity, but really it makes the best sense to have all the information. You fix it; you merely out of these speakers confirm; you book the room. Why do you want to wait for the last minute? So, we will go with it there. And again, we can see, another thing we have done; that publicity for talk, we have actually given a whole day effort here. Is it a whole day effort?

Student: Just for half an hour.

Just for half an hour, which means we should do market in that manner. When we take the second example, you will see how that becomes even more relevant, because if I take; it is easy for me to put the whole day and say, I am locking the whole day, which means you as the resource, the resource you allocate; that is not available for the rest of the day, or you have to say this, and you have to say one fifth of the resource. So, that is also another way of going about it. Make transport arrangements? Same, you can do the same thing; once a speaker is fixed, you can, I might do this; I might confirm this to say that we almost need to do this, right. We almost always have to do a follow-up, because last minute; some things can change. So, you will say yes, I am going to make the booking here; I am going to make the booking here; I am going to follow up before, or you know, is something goes wrong, then I

am going to take?

Student: Preventive.

Preventive, control actions I have to take, but it is better that I built in a little bit of monitoring also here. Audio video arrangements? It will be the same thing. So, we have seen that a bar chart is not simply drawing bars, taking duration and you know, if we could, we would have been tempted to do this five days and then, draw all one-day bars before the 30th day, but that is risk here. First of all, you do not need that one day; two, it is a risky thing to do. So, when you start making a plan like this, we can say that. So, now, I have fixed this speaker, and I am on this day. If I am not taken care of this task, I know that I am behind. I am now on this day. I have to make sure that my publicity has been done. All these tasks have been taken care of. I have a way to now that I have developed a plan that is fairly realistic.

I have a way to monitor it. Instead of this, let me say I have done; I am going to do publicity all of the time. There is no monitoring pass over because you are not going to do publicity every day, every hour at this and you assume, you have not really represented it the way you intend to do it, and so, there is going to be difficulty in monitoring. Is that ok? Any questions? So, you will find that even a simple tool like this can be used, if used you know, appropriately it can be very powerful for planning and then control. I want to take a second example. The second example is something which you do quite frequently, which let us; how much time do you get to studying for the final exams?

Student: 3 days.

Three days. So, let us give yourself five days to study for a final exam. How many subjects?

Student: Five (refer time: 14:42)

No, we will take five days. So, let us keep this simple. We will take five days to study for a final exam, and we can either have, we can have two finals in a day or three finals on one day, two finals following it. So, let us take. So, you got this scope. So, you have five days to study. There are five finals; three on the first day; two on the second day. Think of what is your activity structure.
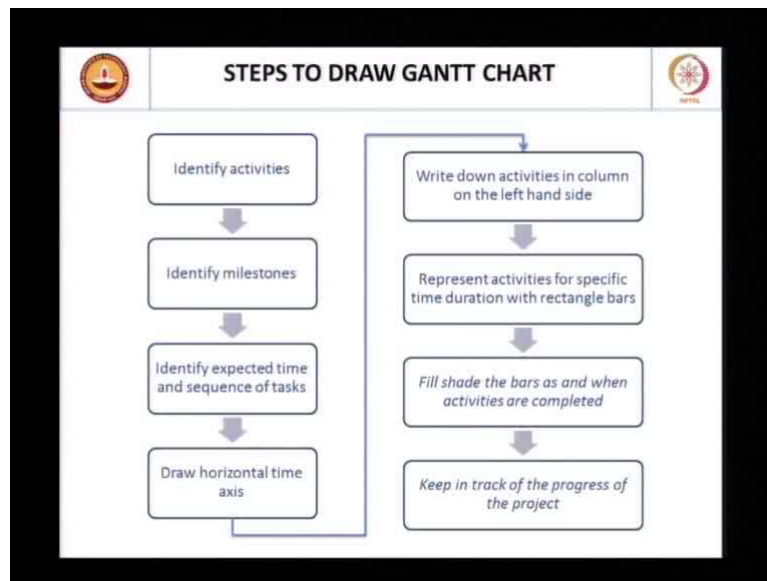
And how are you going to plan it? You think what your activities are first of all? To me, there is a naturally restricted way I am thinking about it. You decide what your activities are. So, to make sure that we are all thinking the same way, what do you think your activities are? How many activities will you have?

Student: (refer time: 15:42) activity.

 Like what?

Student: Studying for x subject (refer time: 15:50)

 How many subjects are there?

Student: (refer time: 15:53) five subjects

 That is what I am saying. So, to me the problem itself, unless you say pre-preparation, preparation, post preparation, studying from this book.

Student: If we are going on the 8-hour basis or something, you want to include the other works that. Suppose, you know means or whatever.

 No, we just take study. So, here you are only going to put your study. You are only going to represent your study time. Other time is other time. So, the schedule, basically, like you have a timetable, right. You have a timetable for these things. This is going to show you; it is a time table basically, but in the form of the bar chart, and you have to be able to use the bar chart. Remember, your time scale here becomes something, which you have to think about, which you want to think of yes; equal weightage for all subjects and you want to probably,

spend equal time for all the subjects; one assumption.

Student: (refer time: 17:28) revision time

So, if you want, I call all of it as study time. This should be your revision; 5 days is for revision. You should have studied throughout the thing and these five days is for revision. Do you want to include time on the day of the first exam as not for studying? We will assume that also.

Student: (refer time: 17:57)

Yes, whether you can; you probably will study for the last two, but we will not account that time to be included in the other time.

(Refer Slide Time: 18:10)

So, if we take activities; we have let us say subjects A, B, C, D, E; duration is one day. Basically, your whole effort is we are saying day 1, 1, 1, 1, 1, right that is the total effort you are going to put. Now, the question is how are you going to plan that effort. So, you have day 1, 2, 3, 4, 5, and then, you have exam starting. So, tell me what is yours?

Student: Even such as day 1 and day 2, we are studying (refer time: 19:31).

So, we have A, B, C will be under the first day; D and E will be under the second day.

Student: (refer time: 19:40) the second-day exams.

Yes. So, now you come; you have to come up with the strategy, and each of your strategies can be. So, one strategy, a very straight forward strategy can be this; very straight forward strategy. Would you use it?

Student: No.

No. So, now, you are coming with saying no; I do not like that strategy; that is a strategy I will not use. So, remember I have each of this, each of the bars represents a single day. What would be other strategies?

Student: So, you could actually.

How many subjects could we study in a single day?

Student: Two.

Two.

Student: (refer time: 20:20) you would want to split your time into 12 hours of each and whatever.

12 hours of each or it could 24 hours of studying?!

Student: No, in the twelve hours you have your extra time.

So, 12 hours of total study.

Student: No, I am saying you have your split up (refer time: 20:34)

Right. So, basically you will spend half and a half, which means how many actual days will you take for a subject?

Student: Two.

Yes, two actually, two calendar days will be taken for a subject. I could represent your plan; go back with white; it seems to be the same color. I could represent a plan like so, I can now, if you are saying, yes, I am going to do that. Here, where do you want to start? You want to start with D and E, or you want to start with A and B?

Student: D and E.

So, you might say I am going to do D, E; that is done with. Then, you have three more days, three more subjects. It is up to you, but you have actually now, under this; you have actually got it discrete; it is not a continuous activity, and you are going to, you can do it any way you want. You can do it as 1, 2, but this is your time chart; yes, half a day; that is what is important to understand. You could do 1, 2 and I could probably do; will that work? So, this is over; A is over. What about B; when would you want to do?

Student: (refer time: 22:25) on the fourth day.

So, I could do A and C on 3 and 4 and just do B continuous; so, this is the possible plan. Again, bars are noncontinuous; allows you to control fractions of time; allows you to split work; allows you to monitor. So, now, I am on day after day 3. I can actually monitor and see what I have done and whether it is completed as per planning. So, again, the reason I asked you for these exercises is to kind of; we commonly think bar chart means continuous bar. Especially, when you are using a bar chart independently, for a small task such as this, the continuous bar is not needed, and it makes more sense to draw bars, where you are going to put the effort. Now, let us just so, I can now use to monitor this. I can start filling out. Let us say I am on the end of the second; I can say yes. This has been completed. This has been completed. I am representing progress. Now, I am on this day, which means I am falling behind; somehow, I do not like E, and I have not completed E for this particular time. I mean, at least, this time, it is common sense based.

Student: (refer time: 24:15) now the D and E if we give the time on the day one whole, I mean, it represents the whole day.

Let me try to represent what you are saying. You want to; you can then do it based on what. You want to give two days or 1 day? Do you want to give two days?

Student: Yes, two days.

That is what you want.

Student: Now, the thing is that in this, it does not represent the 12-hour format; it represents that.

Partial effort.

Student: Partial effort. (refer time: 25:05)

Right. So, here the level of detail is less. So, how can you control this? How would you apply control on this?

Student: (refer time: 25:20)

No, that is seen, if you have something in your mind; it is certainly not expressed here. I come in, and I want to control it as an external person; where can I apply control? Can I apply control at the end of the first day?

Student: No.

No, I can only apply control at the end of the second day, and that control can be applied

only if, I mean, once I apply that control, I will know whether you have finished both subjects. So, my ability to control is less. If you are able to take care of things, no problem. Now, I can also control now if I take partial effort. So, basically I am saying my effort here is not 1, 1; it is half, half; effort here is half, half. I can monitor you on the first day by actually, seeing what effort went in, but then I have to so, I will put in here half, half, half, half, but then the representation becomes; basically, I am putting the same information as we had earlier, but if the time frame is not divided, if the effort frame is divided into a smaller fraction. Then I can control.

Now one advantage of the continuous bar, but it gets more complex, is I do not need to go half, half; I can go one by 4, three by 4. I can go here; I can go yeah, whatever fraction of effort I want to do I can put. So, there is a certain lot of what do you say; when we get just using software, a lot of the software goes in this method. I can specify how much effort I want to put in each time slot and then monitor with that, but when we are using a bar chart more in a manual way, it is better that your visual representation is what you are monitoring, and not some numerical representation, embedded in the visual representation. Any other questions?

Student: (refer time: 27:30) then we can apply the monitor on the first day itself?.

Yes, you can, and that is what when you start using project management software, you can actually do this because it allows you to put one-fourth, three-fourth because everything behind is a model; it is the mathematical model. The visual model is less. When I look at this visually, do I think of this is one-fourth and three-fourth?

Student: No.

No. So, when we want to; I am talking about non-continuous bars mostly, in the context of using a bar chart alone for planning and control. If the bar chart is the result of software, which you use CPM and things like that, all this other flexibility will be able to; numerical modeling will be part of your package. Other questions?