Six Sigma
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Lecture No. # 14
Introduction to Project Management

Tapan Bagchi, I am one of your instructors. The subject we are starting today is project management; it is a pretty large under taking as a course; and the as I was discussing with one of your classmates, the practices in project management, they differ somewhat from what you study in books. But there is value on both sides, there is the practitioner guideline, which is the (( )) book I will be showing you. And also the text book, which covers various theoretical methods, which you need to optimize the process.

So, there is value in both, value in learning both, and we got to make sure, we master both hands. And this course is going to be a blend of both these going to be a good part of theory, some exercises to work out. And also we will make sure we get the exposure and practice in true project management. Most of the examples that you will be looking at would be sharing your own examples, because many of you have working experience. And what all the expecting is that you will recall those instances or those project opportunities, where you probably either a project manager or you are a team leader or you are the project resource or you are a sponsor of the project or you are basically someone interested in just seeing a project take place.

So, that way you would have a lot of involvement in bringing in practical (( )), how into this. That is how the learning is going to be hold some it is going to be complete. My process is going to be essentially using power points, which all be using to (( )) and I like promise to you, I will be evolving these ahead of times. So, are all files of all the slides as I have in addition, I will be also giving you material from time to time which will be taken from various sources. I will be usually acknowledging the sources; many of these are made by my students. Can you believe? Even the slides should be looking at many of those came from people like you, who made the presentation, then we decided that we will in cooperate that in this thing.

So, In fact, it is a very rich collection of material on project management, in addition I also will have (( )) material, which I will be using, I will be using this guide book, this will be one of the guide books I will be using. This is put out by the pmbok P M I institute, and this is the some of the substance of the reflections of practicing managers, practicing project managers, this material also will be shared with you. And as I have shown you in the presentation schedule for different groups, I trust you already made the groups; you will be focusing on the part that is nestled against your group's name.

And, that will be the chapter that you will be covering. Essentially I do not want you to get too deep into theory, because that will be done by me. You bring in practice; you bring in as much of the practicing world as possible. And so the group should get together, and you should really take you presentation itself as a small project. What is the charter? What is the scope? What are the derivable? And then, you get into detail planning of it, some person will probably organize the material. Some what you will look through some example, some what you will sequence, then ride and some other going to put it all together in a power plant. Their presentation can be done generally; it is done by members of the group.

So, that will be done on day two. So, today is like day one Tuesday and Wednesday will be day two that will be your turn. So, the first half an hour tomorrow it will be, me, sitting here and in the latest of half your group takes over. And you basically tell us about that chapter, now this will happen starting next week, not this week. So, you get the time to look through this, you look through the material. So, on the internet you will find a lot of related material. So, it is not going to be just the pmbok guide or the text book that you will be referring to; obviously. You will have some of your practical experience that will be there. So, make a list of that and focus in the presentation. Only on that aspect of the project, that you describing, that relate that day's topic.

So, if it is like scope figuring out scope, then you try to recall, how we figured out the scope of this project. All these concepts are we covering today. So, I will give you the overview of complete project management to relate of. So, you have a pretty idea of what all is involved in basically conceiving, then planning, then executing and then closing down the project. We will walk through the four steps, later on in the following

lectures; we will be going deep into any of those topics. We will be going through a lot of those topics, lot of those details have. So, on and in some cases we will be working out some numerical also.

So, we will set the ground today for CPM pert, we will try to do that today. Tomorrow in the first half an hour, you will try to work out some numerical. I will give you some assignments which will come from the text book. And that text book happens to be this book, which is the book by Meredith mantel fifth edition, it is published by Wiley, and it is called project management managerial approach.

Now, this book pretty well, it is like any other book on project management. I found it to be reasonably readable all though it is little verbose, it is a little now, the there are probably too many words in certain places. But it is a good reference to have, but you are free to use any book that you want, just make sure when I assign a certain numerical like one CPM or something. You refer back to this book, and you go to that particular topic. In fact, particular question and you tackle the problem there. Again you could study this in a group mol like I was telling you yesterday.

The best way to really learn any subject is now that your groups, the group should get together for about half an hour. And what the group should do is? Basically walk through the lecture from beginning to the end. As if you are sitting in the class and pretty soon there will be mounting these things on web also. So, you will be able to review it again, if certain parts are not clear, you will be able to go back and review it again. That we will have a pretty good grass for particular answers were then try to find out.

If the instructor give you an examples in a illustrations are small, if it was all clear, then that is fine. If something was not clear again, you discuss among yourself, this way. Believe me your learning is going to rapidly climb, and like I told you yesterday, I do not want anyone in this class to get less than a my minimum mark marks. I want it hear should be a it will be between a x and a. That is I would like to be the, I really a like to you know, if I give you the feeling that you learn something from this also. You end up with the happy ending, it is pretty intensive course.

So, it is going to be lot of work to do for you and for me, and we will go through it. I am pretty sure I have already been talking to some of you and I have, I realize some of you have project experience and some of you are very eager to get into this. If you got like dissertation or some other, you know engagement, if you want to do a project and again come and see us at some other time, perhaps after the class. And then, we will try to see what we could do to try to help you along, that also is definitely possible.

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With this, let us try to see if I would start with the power point. So, the topic is project management. Examples of projects, many examples are there. In fact, it turns out most of our life. If it does not going to production, it actually goes into working project. After project, some examples are here. Contract software development, I am sure pretty, several of you have been a in that building construction. Finding a job is a project getting admitted in (( )), that was a project.

Then the large once, building the aircraft carrier or putting up the space station up there, r and d projects. Many of you have worked on those things, audits, ad campaigns, new product introduction, open or close a facility. This could be something that is not going to be use later. So, you want to close it down or probably you want open a new one. Making a movie is a project, a wedding is a project, fund raising campaigns, these are all

one time under taken and the distinct fee about projects is that, each has a work breakdown structure.

That is something work breakdown structure is basically undisturbed deliverables, which are raised in some hierarchy. And, we will get a glimpse of this, as we going into the project; we take a get a glimpse of WBS.

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That something will be learning at, looking at even large projects; obviously, they are, they all have the same pretty well, the same personality. Whether this is a small project in a put to be putting together power points for your next presentation or building a bridge like this. They are all the same; the good thing about knowing some, you know, methods is that.

If you manage a project according to some frame work like for example, this pmbok framework, if you do it that way, you can control the cast of your project. You can control the time to finish this project. You can also make sure it comes under within budget and so on and user satisfaction is maximum, all those things can be accomplish if you manage your project with some systematic framework. And that is the goal for learning projects this way.

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Typically if you walk into a project manager's office, you will see walls that have these Gantt charts. And the Gantt chart, they can look like this, they have activities, then each activity ends up with the mild stone that something that is very common along all projects. Then one mild stone when it is turn it will moves on to the next mild stone and so on and so forth. It keeps going like that, there is some sequencing there?

This sequencing actually, it is technologically determined, I cannot abruptly do the last part, first I just cannot do it. Because there is a technological dependency in every activity, as is there, if I go into be spending any time on any activity, there is a right time for it. These are right duration for it, those things are paramount, those things are critical, that is why? We always have this sort of framework, the to do. To display what is going on?

Now, there is a definition that is given by the pmbok people, the standards people, they say it is unique one time operation design to accomplishes specific set of objectives in a limited time frame. And you all know, that is, what a project is that is not for production is like in production. You produce the same stuff a thousand times that is not what we are doing here.

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In fact, many of you, if you are aware of this, and many of you who work for a large software company, they would like to know, if you have some orientation project management. In fact, if you have some good credentials which has been certified by someone. And the PM PMI certification is one there is sort after very; you know lot many people would like to have someone on the team member who is a PMI certified person. This way they get an (( )) over other people, who do not have people where the PMI orientation.

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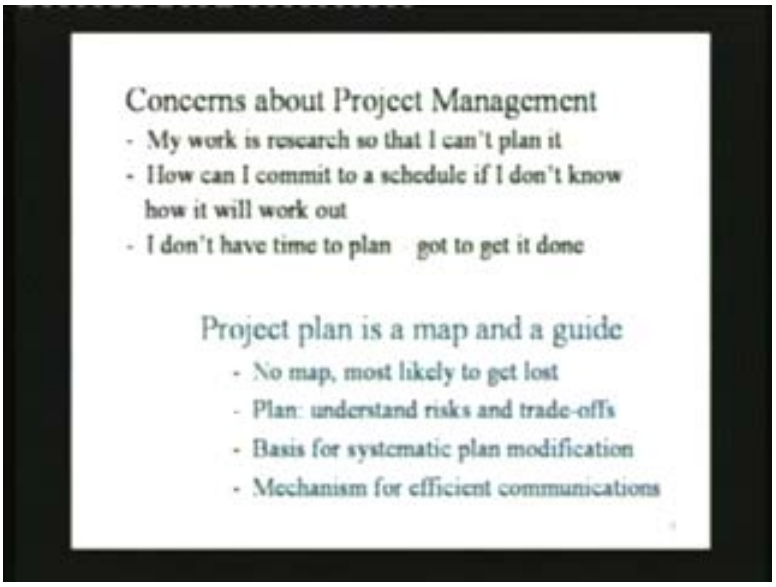

So, that is like something that again highlights the value of doing this systematically. Many people they are frustrated the movement you bring in any kind of system, you see got to follow your particular system to do the job. You got to follow a certain system and you get reactions.

If somebody tells we have to wake up at six a m to review my slides at seven. I have to get down, get my breakfast and so on and so forth. As a why are you giving me these timings? You leave it to me or do it, the problem is this, and those reactions are just human reactions. And, they see this sort of thing, someone who is doing research like doctor bagchi does some research, and if you turn me, if the drug to test me in one year.

You have supposed to publish two papers, I immediately begin to react, I say my god that is a creative work. How can you fix a quota on this? How can you give me a time for it, research is such a prevailing thing, I cannot really plan it. I cannot really give here any kind of thing. I cannot commit to any schedule, because I have no idea what activities are going to be involved. It is that is like a human reaction. In fact, I do not even know many times how it is going to work out.

So, how can I plan on something? I have no idea of what is going to end up with that? I

just do not have and also probably I am going to be busy working on the project. Where do I have the time for it? The reaction is this the response from the professional's is this. A project plan is a map and a guide just few weeks ago, I was trying to get back to the railway station, there were some guest there and I was trying to get to the (( )) the kharagpur railway station. And believe me, I had been driven back and 44 45 times, and I thought I knew the road. Sure, now, as soon as I cross the bridge and then I just did not know where to turn. I ended up turning in a palm land. I ended up some place and people said; well that is not where the railway station is? You have to make these other things and they showed me shortcut and you believe me shortcuts are you know, what they are?

So, that is what I ended. Because I did not have a plan, I had not bothered looking of the map. I had not talked any one; I started to work without a plan. The result was, it took me driving, it took me forty five minutes to get through the railway station. Which should take may be fifteen, twenty minutes that is it. So, that is like a lesson, if there is no map most likely will get lost if there is no plan. The project will get upside down, it just would not work right way.

Then the other issues, there is the issue of trade off between; we will see what tradeoffs like. Tradeoffs are like you sometimes tradeoff between cast and time. Sometimes you may even have to compromise the scope. You may have to cut back, some things like in many times in software development. They say the user after while he comes back, he says well I want the screen to be doing this. I want interact use up in there .And, so, on so, forth, I want a small data base to take care of. This I want to have a special report that would do this, you already have your plan. In place any of these things must come in as change request a changes put. In fact, the regional plan if I do not have a plan to begin with, my god it is all going to be top seperatable.

So, that is why again the importance is that you got to have these plans in place, before you can work out .Those tradeoffs, then there is a huge issue, you control the activities, you control the resources, you control the contract, and so on. And you try to do things as per your plan that is what you normally try to do. Whenever I am doing project management, but there are so many things, which are not in your control. The weather somebody quits, some equipment does not work, raw material does not arrive or there

some calamities or something. As a result the project gets disrupted.

For these things we have to foresee as much as possible, you got to foresee these things it is like, when we start from the hostel, we have to reach here by let us say 8:25 .We would make sure if it is like a rainy day would give extra time again. If it is deep winter lot of fogs, we give extra time. It is a nice sunny morning; you know spring morning we will probably take the minimum time to get here. Now here there is some variations, based on this uncontrolled, variable uncontrolled factor which is weather. So, for this we got to do risk management.

So, this is also, meeting. We got to do when we are. Whenever we are doing a project we got to get a very clear picture of the various risk involved in the project. And make sure you come up with a risk plan, a risk management plan and we implemented. So, alongside getting your resources and everything else you also got to make sure you got a risk management plan in place.

So, that when these things happen, you got a way to do this. We will get a lot deeper into this, as we get into the subject then; obviously, if there is going to be a change there, like I mention change control. If you have a plan, it should also in cooperate. This change management plan which I am pretty sure, those of who are in I T? You already worked with these things; the change must be authorized by the appropriate authority. Because if you change things without tell him, it may cost you more time, it may cost you more money .And, so on so, forth you may not have the skills for it.

And so on so forth, so, it is got to be approved by someone who will then negotiates this with the sponsor. Is the sponsor willing to live with that longer time? They the delay in the delivery of the project. Is he willing to give you the extra money to be able to run the project, to be able to complete the project? Those things are there and obviously, another thing that happens, when you got a good plan is you are able to communicate. You are able to communicate with your resources with the contractors with management with sponsors so on and so forth. If you have a good plan in place you have something specific to discuss if you do not have that, if you do not have this specificity, people find communications to be very vague they do not know what you said no merits are kept and

all those things and for that again we got to have a good plan to begin with. So, it is like something we cannot really escape. There are various people who are interested in the success of the project, and first and foremost is it project sponsor.

He is the guy who makes a business case in his head, what the value of the project? He is the one who determines. We got to have a over passed built here, we got to have this term paper written, we got to have this new product develop, we got to move the class from one place to another place, we have got to go to a different location. So, on he is the one who makes a business case quality. In his head sponsor is the person who normally also comes up with the resources, but the sponsor himself is not the project manager.

For this, we imply people who are called executives and certain the project manager is going to be one of those executives. There may be other people also, but the project manager is the key executive, the executive actually is the executive. He really runs the project right from the beginning, he does not only do the execution, he also does the planning, he does he helps the sponsor to try to do a good selection. And so on so, forth and he also hands over the project, when the project is complete that is there.

The resources are again not the project manager alone, he founds a team, we have a team. The team basically brings in different types of skills, if the members of the team they come from various places. I have work done in technology transfer project back in 1975 I was an employee of Exxon Mobile, and because of our performance in the company seven of us we worked in different places in the US. I was in New Jersey, people were in Texas, some people were in California, and some were in Canada and so on.

We were brought together because of the know, how that we had? Because those skills that we had. I was the industrial systems engineer and he understood technology pretty well and I also had some background in automatic control so, on and so forth. So, I was put on that team there the sponsor actually said, the sponsor was one of a vice president he said this is 1975 pretty soon people have to remove from the plant, the workers they will have to be removed from the plant.

So, the charter of that project is you go out scan around and try to find who are the people? Who can give us automated process control systems? Then you figure out all those software, hardware business. And everything then you guys do the engineering. Then you go out and implement the project, you install the project and you run the plant for six months under automation. That is going to be your charter, seven people were in that team, they full seven people they came along and what they were suppose to do was?

They were suppose to bring they do not know how? Own skills and do it. This is one project where I found really the team thing, there is one thing that you bring as your as an individual, this got to be real good communication within yourselves. Of course, I will tell you about this case in a many times later, we did not start with the good plan and the result was pretty close to disaster, it was corrected of course, by management halfway through the project.

And that story is going to come back again, as we go through our program, as we go through our course. I am going to bring this case again and again, there are lot of learning's, there sponsor finances the project. He (( )) put aside the time and money and management and so on so forth to make sure that the project get's done. People who have benefit from the project are the customers; they are the ones who really gain the benefits of it.

So, again that is a distinct group when you try to establish the scope of the project. That means, what are the deliverables? What things will be included? What will not be included? The sponsor will usually tell you here is the group of customers go and talk to them, they will tell you what we need? Then you start your planning, you start your planning from.

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There do not do your planning just because you have some background and automation or something does not do it. That way talk to the users and this the best way, I am pretty sure you know closer, you are to the customer they more involved. He is (( )) defining the project they hire is going to be his satisfaction in the end then a major resource in a project in a your project is going to be the contractors. They have the guys who are doing the job for you, they are the ones who have to be given, what we call work packages?

So, in a IT company for example, you have contractors you may even out source some of the things. So, there may be some purchasing involve like for example, when Sire launch this PSLV rocket the outsource fabrication of the satellite and also fabrication of the satellite launching vehicle to a company. This is the private company who took it over and they built things they were subcontractors. If there are other people going to involve for example, contractors, subcontractors they also have to be managed. So, this is also a very large task in project management.

We got to manage these contractors, if we do not do this, they will just wait for the final check at the end of the day. They would not really bother with for example, all it all depends on the terms that you have with him, the agreement that he have with him. As to how he is going to be paid, but generally speaking is got to be site inspection that is got

to be quality checks, this got to be certification. That work package is complete only, then you make the payment and so on so forth. Then you got functional managers who are these functional managers in an organization.

Speak a little loud (( )) Exactly, good, more functional managers (( )) good they are people, they have people, they have designers is the design group. Your project requires a designer, you would not probably hire a designer for the for the life of the project is probably tapping to this design group. You will probably tell them, tell the functional manager I need to two designers .One should know Auto CAD the other should know whatever interfacing is required.

And so on so forth, that is what I need for this. And you will do the same thing with production people. Some input may be required there; purchasing people may have some people there. So, all this verticals they will provide. You think these verticals are functional verticals, they are not necessarily, people will deliver a particular product for you, but they will do the thing.

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Again, to remind you what is it that we are getting into? We are getting into a temporary undertaking, and that is going to be delivering a unique product the service. So, you have

the project lifecycle that the project lifecycle and what you end up delivering? is the product or the service in the end.

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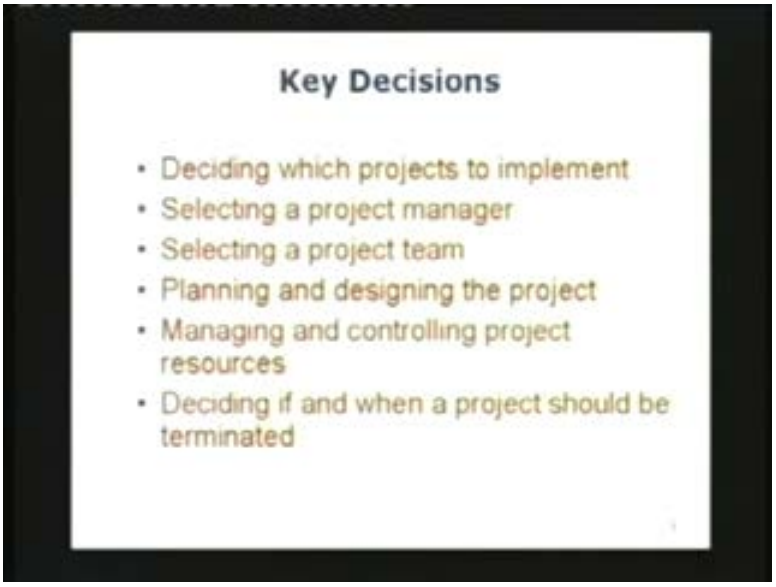

We will see that in a few minutes, some decisions have to made as you are going into this project, which project you implement. Now, this is for the sponsor to figure out you as a project manager. You have someone who understand that the domain you probably most likely? You will have some input there, you will be able to say, sir we will let you have a chat with a Azim Premji or someone and on the fellow who have been running this kind of thing. And they are probably pretty senior in this area, I know you are pretty ambitions; you want to get in the IT area.

You want to create new ERP software? You want to do it for the small scale industry people for example, what kinds of issues are involved and so on so forth. These you know, we will make sure that you get interface with somebody that you know. The, who is an expert in this area? Deciding also would require for example, not only sizing of the benefits, but also what is going to the project is going to cost? How much time, it is going to take is that going to be for you, if you start a new brand new refinery, it may take you five, six years to build it.

Can you wait that long? What is the competitive position going to be? A fuel company at that time will you be able to resource it and so on is the r o y going to be good enough, and above all are the risk such that you can solve the risk. You can live with them, those the issues are the ones that get into selecting the project. Deciding which project you go on, will give you some more details on this selecting a project manager, and I am pretty sure you understand.

Now, you work, there are some people, you give you the life. You give (( )) the other people, you would stay away from. If you got to make sure there is like a natural attraction towards this person is got to be competent. And everything else and I am going to be bringing up some skills which are besides the technological skills. I speaking with one of your classmates and we could figure out there are. So, many variables that are beyond our control, but the one that is worst is the human factor. So, many people you have to deal with and personality they have to deal with and.

So, on it is not going be very easy to do it all, but after all we got the charter to deliver the project. This sponsor gives you the charter of the project, and again, we are clarifying what exactly he does? Selecting the project team again, this will depend again on people, kind of you know, they do they have the skills, are they available? And are they easy to get along with and so on so forth. Those things would be there then of course, the decision is going to be the plan. And design the project, basically this is going to be where your c P M part is going to come in, once you have that, clear it is pretty clear, we going to be doing the project. This is the budget; this is the time frame and so on so forth. We project it a finished deadline and now we have to manage and control the project resources, because the project is going to be done with a help of these resources. We are going to be there and you got to make sure those resources are available, when you want them, they are going to be available. There if they are not available project is going to be delayed. So, we will see that we will see some of the hurdles and these are again they come under risk and I am going to try to take a look at that.

Sometimes you got to say enough is enough, we got to terminate the project either we have delivered the deliverables. That is something that we have done or it is not possible or there is the business scene has changed or something. So, if you look at

pharmaceuticals for example, they come up with so many new molecule .You know if the passion of a PhD chemist is to come up with a new brand, new molecule and he comes up with penicillin or something, my god he is the king of the world.

So, all of them they tried just like you (( )) try in your own way to try to come up with that new magic software, they tried to see they can come up with an molecule. So, there are if you go to a typical company go to Baxter any of them, they probably have 50 or 100 chemist all PhDs hi-fi people busy, you know with their lab coats and all they busy building these molecules and you know combining the various ways and so on; ninety five, ninety six, ninety seven percent of these molecules, they are put in the down there because they are not viable for various reasons.

The fail, the annual test they failed, something else, they are not stable, they do not good shelf life. They will not effective you know, these are some of the things that are almost critical. You got to have those things in order for you to succeed in the project. So, many times we have to decide merciless good work great work. You will get your promotion, but we cannot move with this project anywhere. So, that is like also meshing, when you got to decide should I terminate the project now or should it go on for a while.

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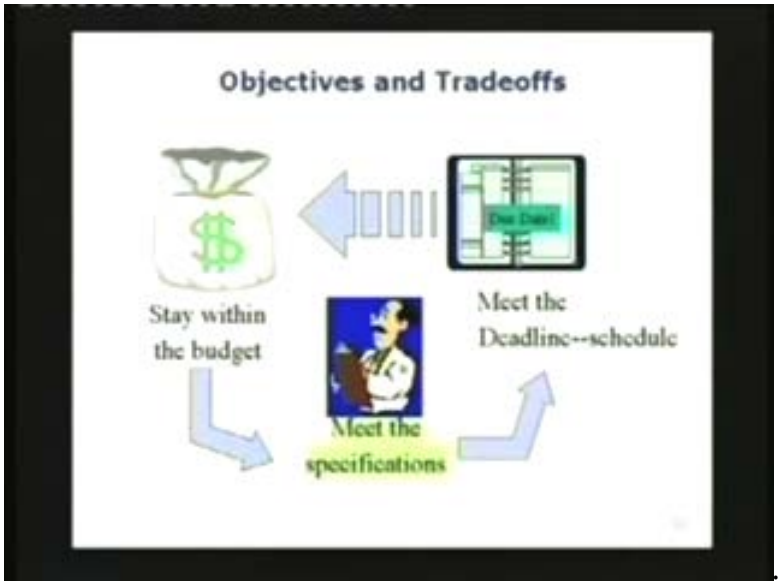

We now, come to the crux of it like if you got a project you have obviously, got specifications. These are the requirements, that is what it written down when you interact with the sponsor first. And, then your clients, the customers, the users of your product or service that is the place for your record. And I am pretty sure, you gone through for example, to figure out what software to build. You have done a lot of these things, the requirements; this is kind of a funny area.

Because many times the user does not know what he wants? And because the user has not used it, he still does not know, what exactly is good for him that he does not know. So, many times he may like to get a partial experience of it. So, either you build him a prototype or you take him to a side, when you cross that bridge or walks over something or you uses the product and then he gets a feel, oh my god, I now I think I understand. You see, I have got a new thing which is like a new mouse; it would not have the squad with you.

But suppose the fellow is not used to this sort of thing, then you got to expose him to this either through Bluetooth or you know some ray or something. Somehow, it is going to be connected by wireless and so on. If he is never experience, that he cannot even tell you, what all he requires? So, this is going to be the challenge and trying to make sure, you specify this thing and it is got to be all formal, it is got to be all written down.

Once you got this fixed, you ask the question, how am I going to be doing it? Then he starts detailing the project. I am going to walk you through that. We start with the charter, the charter is make sure the customer is happy, then you define the scope which tells you what things will be included in the product or the service. And what things will be excluded will be kept out of it. With that, you get down to what we call WBS the work breakdown structure. And then, you do your planning and the planning will lead to your schedule, and it will also lead to the deadline.

What is the deadline that is going to be reasonable? Deadline for you to come it to. So, I end up with the schedule I got the sequence of all the different task and I end up with that. And then I do my estimation, I do two types estimations, one of course, I have got the time estimates done. And then money, without money we would not going to do the

project. So, that has to be done and there are some cost engineering will have to be done. Some cost estimation methods will have to be done I will catch a glimpse of these things.

As we go along, we will end up finding that there are techniques available and I am pretty sure some of you are probably use these things. You know you have various cocomo methods and so on so forth. In the IT world, where you do the estimation other process you have a b c activity base cost thing and so on so forth. With the help of that, we end up casting the project; it is actually not that difficult to do these things. We have followed this system and from many of these things systematic templates are available. If you just fill in the boxes we will end up with the right estimate.

So, that is like something that we could easily keep in mind when you are approaching a project. But many times, if you got to meet some stringent (( )) it may take you long time, it may cost you lot of money, then you got to go back to the sponsor again. You ask him, sir tell us do you really need all those things, it is going to be you know cost you. So, much money it is going to take you. So, much time can you wait for one year before you get that product in your hand?

Now, that is where you end up doing tradeoffs between the objectives, because the fellow probably has a dead line in mind. Because there is competition also working on something like that, he got to make sure competition does not get there, before you do. Number one, it should also cost something that is within budget, we got a portfolio of various projects we got to make sure I have got these five products coming up within next two years.

We will have these five products coming up; the first is going to be out in six months, then one year, then fifteen months probably and so on so forth. That is why let them out you got to make sure it fix into the portfolio, and it actually is a buyable thing for you. Complete to do see you probably keep looking at the R O Y also on this. That is when your objectives and tradeoffs those would come along, that is like something part that is part in partial of this.

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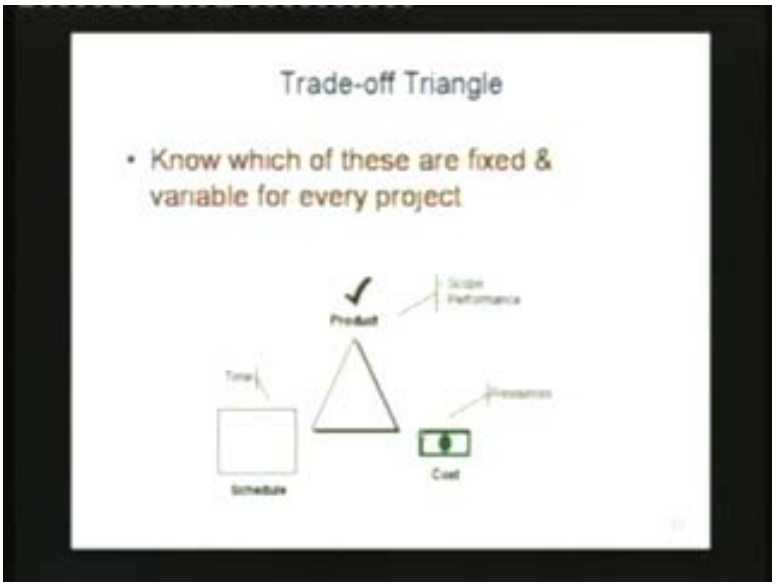

So, we talk about this trade of triangle again, we have the same three issues. You get the product which has got your scope and performance, which is basically the requirement from that I come up with the requirements in terms of work requirements. And I come up with the schedule, then I do my cost estimation I come up with the cost side of it and then again I go back to the sponsor. I tell them if this is what you want? Please make sure you have you allow us that much time as going to cost you.

So, much then there is going to be some tradeoff between these things. He will probably say he had looks like it will be, but try to see, if he could speed it up a little bit. I want to have like the product ready three months ahead of time, there is going to be some tradeoffs here. This only the sponsor can decide the project manager should not decide. The project manager's job is to articulate this thing, to make sure it is cleared to the sponsor, creates it very clearly to deliver these things is going to cost me so much it will take, so much time then you show him some shade offs also. I do a lot of research you know, I do a lot of analytical research and the research on software and so, on.

And many times when I come up with the solution I also worry about this sensitivity. That if the changes by 50 percent, what will be the impact if you do this, you are a smart guy. You are a smart (( )) otherwise if you just come up with one answer if the sponsor is

going to again ask some questions. As what will happen if this is happens? What is going to happen now you? Better work those out earlier before I had before times out of that is something will that you got to do stages of project management.

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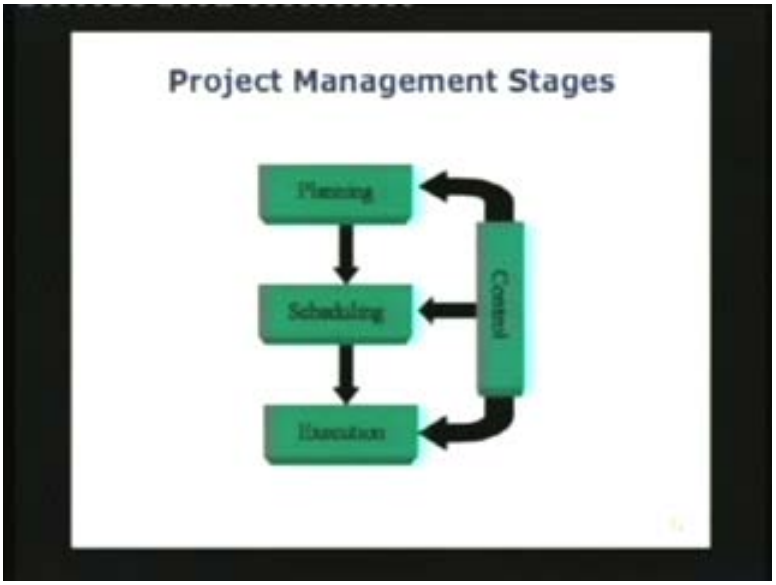

Now, this may not be very clear on the slides here, but if you make sure that you look up your PDF and you see what these boxes are these are the major work categories this going to be; obviously, planning part and you will see it see it in another light in a couple of minutes you will see that this is the planning part of a project that the scheduling part scheduling also get into estimation of time and cost then you got the execution where you basically do your contract management and while these things are going on you got to control the project control alone make sure that you deliver what is wanted

So, control is like your feedback control is knowing. I am on the right track I am doing the right thing or it says you deviated either you have to work more or you have to put some more money to be able to do it ,it can also say your quality assurance is poor.

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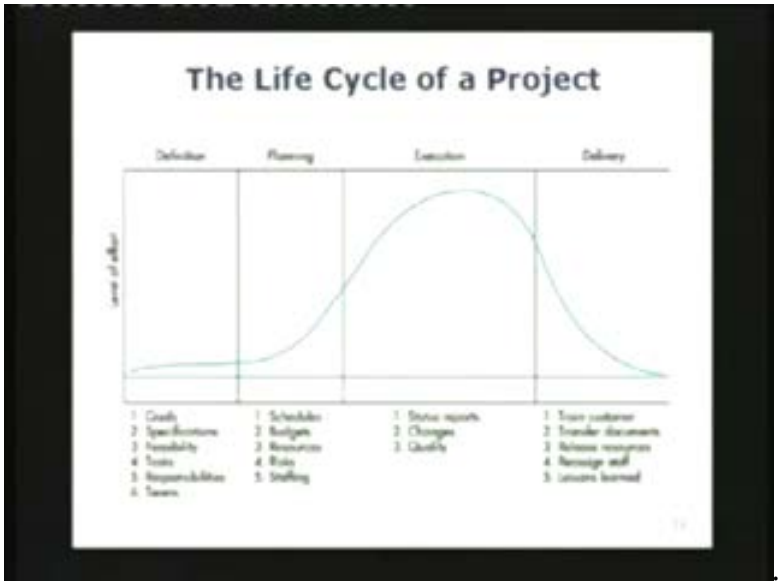

So, quality is another aspect that you should be looking at and you should try to make sure that you satisfy people on the quality front also. By far in my complete lecture this is the most important slide, this is the slide that displays the life cycle of a project. You know about software development life cycle this is for any project, you give me a project I will be able to identify it is parts, limb size, nose and so on so forth .And I will be able to show you where exactly it fits here.

Let us try to walk through this starting with a very broad view of this. There are four phases of the project the first is of course, defining the project, conceptualizing and defining the project. The second is planning the project, working out the details, now define what I want? I will be planning that details of the project, you do this in software development also. Then is the execution part there is the execution part then of course, the last part is delivery.

These are broad four phases and in fact, if you look at the pmbok guideline they give you special methods to be utilized. For defining the project, they give you special methods for planning, they give you special methods for execution and they give you special methods for delivery. I should also tell you that the planning part is not covered very well by pmbok, because that is you involves some theory, and if your plan is poor the whole

thing is going to be thrash. So, you to make sure your planning is done, the best way possible and that is where need theory.

So, when I say that you got to have good theory with you. Got to make sure you understand the principles behind critical path. For example, principles behind cost estimation, principles behind risk management, and principles behind contract management and so on so forth .If you keep those things in mind which come from this red book the theory book you are going to be much better of the practical book. Our pmbok book, this is going to tell you, how to do it? But it does not tell you actually the it will just give you the steps. But a do it the best that you can you got to use some theory.

So, that is why we got to make sure we keep both things in mind, theory along will not make you a successful manager, successful project manager and pmbok.

(( )).All right I will go through this, I am going to walk through the details here; I am going to focusing on this. The first one which is the defining phase this is the part when you interact the most. The project manager interacts the most with the sponsor of the project and he starts by asking, what are your goals? What is the business case for this? When you try to understand that you tries to make sure you understands the goals of the project.

The mission of the project this is also in their language this is called like in business world. We call it mission and but in the language of project management that is called the charter of the project. The charter pretty well gives you know the gives you an one option, what exactly is this product? Project trying to accomplish, once the goals are fixed then you get more specific. You start interacting if you accept it, and if you been predicted and so on and so forth. You accept that then the sponsor say's now interact with the users and you determine these specifications.

So, specification also is something that will be doing, you are not doing any planning here, you basically just trying to hammer down what all things I have to deliver. So, there may be some discussions there and and so on and so forth. So, aspects are given, there is a particular platform your new software must run on that platform. Because in that that is

the vary in that platform. So, you got to make sure it.

So, that is like one of the requirements, and then you got feasibility with respect to time and with respect to the finance. Those things are there and of course, skills if these are sorted out. There you will have fellness problems and if you, as you go deep into this then you start defining. You slowly start defining the task, the task are defined by looking at what we called work breakdown structure? You look at each deliverable. In fact, in between I am also define the scope of the project scope, basically tells you what all things will be included in the project and what will be kept out of it.

So, if you designing a new car for example, may be you want to design a solar car as an example just for demo purposes to demonstrate the technology you want really build a four sweater solar car right you probably build a single sweater solar car that will sleek and so on and so forth and will be able to you know light weight and all those things would there

So in fact, that pretty well defines for the product is going to be, see you look at again the charter of the project; locate the scope of the project. Then you look at deliverables then you start asking questions, how I am going to be delivering them? And you get to task and I am going to be give you some of details on that. How to get there, then you also work out the details of project team. Who are the people, who are going to be involved and as you know, as we have mentioned. There may be domain experts involved and what would be their responsibilities? What would be their individual responsibilities? That is also, mething, you got to sort out now and you for your team.

Sir, is it the convocation plan it responsibilities.

In fact, before you (( )) planning, you got to have those things all sorted out the reporting structure, the reporting hire to the media of reporting and all those things. And will be looking at techniques like (( )) value management and so on and various reporting things will be looking at that is something that will be doing as we go along.

So, let us see we done with defining the project, we got the deliverables very clear, we

got the task very clear, then we keep breaking down those task to the point when it becomes like work package. You start with one big deliverable then he end up with four five per packages basically supporting it. And some of that are development schedule are do my estimation I will get my budget then I will arrange for resources required. And now the risks are all those events that can fall up your consequences, your results and all those three fronts. One, they may fall up requirements they may take you (( )) budget or they may take you beyond the dead line, the committed dead line.

So, the risks have to identify and we have a special lecture on this alone, as to how to identify risks? How to mitigate them? How to do? How to decide? To perhaps, live with them or how to have continuous (( ))? So, that in case things do fall up, where do we do, then the plan b in our language, the plan b. Those things will have to do what we get into risk management then of course; staffing is there, this staffing is very critical. I will give one example.

Three years ago I was visiting the petro chemical complex and as you know most of these they have a gate and the security is there. They check your Id and so on and so forth. I was from IT. So, there was really no sweat getting through it, but just as I approach that gate I could not get there, because the taxi fellow, he said sir there are lot of people here at the gate I do not know if they let us in these were daily wage people. And it turned out that couple days before that the company as the particular plant has announced, had announced they will be starting a new unit and they will be requiring labors.

So, all these they knew they do not you know sixth of January 2009 they are going to be allotting some jobs, they are going to be hiring some people. So, something like 1500 people were there with the hope of getting a job. There all kinds of there are people who dig ditches, there are people who lay pipes, and there are people who do welding, and so on. Those are all there, the thing is these staffing plan was not made clear to people.

So, even the designer or the quality check man there are all was there right on day zero. But this is here not going to be hiring these people all of the back, like your planners come in early. But planners do not stay there, when you are doing execution. Then it got

contract managers, we got quality assurance people, they do not really come when you are scoping and so on, there is no quality to be checking, there is no product or service at all. So, you got to make sure when you work out your staffing, you have a profile a certain skills will be required, early on. Certain other skill will come along later on this has to be thought through and this is why you need the experience project management. He should have worked on projects; he should have some projects he should have well into some problems

If you guys if you never had a Tyre function on you, if you never had a Tyre blow up. You will not be very careful on the road. A friend of mine when I was in New Jersey, a friend of mine told me he did a penny test on my Tyre. I will tell you later about the penny test, he took a linkmen penny from his wallet and he checked something on my Tyre, I thought use trying to scrap up something from my Tyre. But he just went with that penny and he did this sort of thing and he then said tap an watch out your right front Tyre, it is wormed out.

And I (( )) looked at that Tyre the (( )) Tyre look fine I gave it a couple of kicks Tyre sounded ting. It was all I said thanks I will check it out later, he said no tapan please watch out the treads are getting thin. I mean it is slight getting close to this thing. I said oh I will see (( )) on the same road my Tyre blows up when I was doing sixty miles an hour. So, it is something that you know I can brush it off and so on and so forth the signals are there.

So, is why you got have controls and above (( )) signals from the system, the system is telling you, please help, please do not stretch me. Anymore and another incident take place, took place on a different car. They (( )) they are standing outside as I was travelling in Lokhandwala in Andheri, I heard some strain sound. Now you all know your mobiles, you also know your bicycles. You also know four wheelers, if something strange happens with your vehicle, you know right away like you take a pen and give to a friend or give you, take a laptop. You give to friend and he returns it to you after two days at laptops behaves strange. Because he has done something to try to you know the same thing have with vehicles also.

Now, you are (( )) very familiar with all the sounds and everything I had the window down and I had some strange things. Some strange reparative things I said I have not heard this before and there is particular no treads on road till they showed reparative thing. So, what could wrong then I just do not want be may be one of tyros is you know breaking up of something. I go to side and I found about two inches of the Tyre turned out for some reason it got turned out, but it was just that lucky chance that there because I had already I had a blow up. I did not have another blow up there, and as you know in high speed if you blow up the Tyre can flip the car, can flip and so on and so forth.

So, these things happen to try to take care, this will be doing risk management and will be looking at this will do a bit of (( )). We will try to find out; we will take some projects and because you guys will be making presentations, lead the team. That is going to be handling risk, I hope very much and you will clear this. Before you actually come to the presentation here I will help you also with your presentation. In my office I have got lots of time, she come here and got an idea is as a this is how we want to make our presentation. We come along and do it; I will be scoring your presentation. I want all of you get each one of you get ten out of ten. Make sure it is a business quality presentation as per you.

Then, we move into execution, is where the contractor takes over he use expectation should be very clear. Because he is just working on those work packages, he does not work on variety at different things. He just works on the work packages, I have to finish this. Then I pass it on to this guy, he finishes that then it passed on to somebody else and. So, on this sequence he has to be writing and every time there is a hand over quality check has to be there.

So, this is again some place for you need to put in an extra person who understands the domain. He knows, he has if it is very clear, you bring experience person, lots of engineer, lot of civil engineers. You bring someone who actually builds houses and roads and so on and so forth. He is the one who can talk about concrete, he can talk about mixture. Now all those things, he can probably do that are the kind of person you need there. So, you need quality control people, there you need contract managers there and while things are going on.

Many times you have to delay things back to the sponsor or to other management or to stake holders and so on for that you need you pours. I will show you what specific reports are there for two things. One is the schedule skipping got to have your yellow flag or red flag go up now. Moment you schedule begins with skip number one. Number two am I going over budget for the amount of got done is I going over project. So, that is like pricing issue. So, there is a schedule variance that has to be reported captured and reported. And this is the priced variance that all has also to be captured, reported if these are done you will be right on top then of course.

I check quality and I move to the last stage which is your delivery of the project. This is actually very important part here, the customer for the first time they might be experience your software. So, for that what you have to do is you got to train you on that software. You got to make sure the training has completed; he understands what he has to do. Transfer the documents, any documenting documentation that you have prepared and most likely those documentation would that be done while you are doing execution. Someone might be preparing those documents as you are going along.

Release the resources he do not need to carpenters and the dig ditchers and so on. You just do not need those people there. So, you would be probably reassigning them some others that is all. So, something you will be doing them; obviously, would like to get a promotion and all. So, please make sure your HR people know this is coming up there will be (( )) up a lot of people. They have to be probably assigned to different places and all and so on and so forth. Then you do a post mortem which is like the lessons you learned from the project, this also has to be done. You please make sure that the project at the end it has this closely meeting not only this sponsor has to be happy, not only the users have to be happy, but there is got to be lessons learned and those lessons have to be documented.

For example may be your risk management was not good now and you ran into snags premier estimations were not good enough. And you ran into some snags before that may be he did not the understand requirements or maybe the process of finding the requirements was not good enough, may be you (( )) photo type at the definition stage. Before got in planning probably if you could have a model there like when we build a

large model, there the director looks at the building, looks at the orientation.

And so on, he either looks at for example, would you believe when I am going to be planting the neem tree and the mango tree and so on. And how the shade is going to move on the tree because on the process are running, you do not want (( )) sun to be shining on the road or on the building. So, that is how which something the director looks at. So, that a goanna thing when I got the proto type in front of me, it because much easier for me react and to make changes and so on and so forth. So, this is also, mething we got till keep in mind that is like the (( )) lessons learned.

There may be other issues also costing issues may be there staff reassignment there may be issues there and so on and so forth. And also he document things in such a way they can retrieved this is like something that you would like to do. I will continue in just a little few min I will be continuing any questions so far go ahead and fire if you have a question

Sir is (( )) cash flow.

Ah not, yet not, yet we will get into that is like when you justify your project is got to be cash flow analysis done, ROI done. Either you workout MTV or you workout, I will probably give you hand out on that also to include that. Any other question?

(( ))

What is continuation plan? Your mind.

Continuation plan is back up planning is.

Back up planning

(( )) buildings (( )) (( ))

Actually you should get into that at the planning stage itself, what if things form up it seems the do not come out the way. I plan, what would be done? What would be my action? You try to do that there itself. I will give you again more details if you would like to make the question more specific. Later on I will pick this up and I will give you more details as how to do this more questions.

Sir, what is the level of (( )) is it the total number of man hours involved or something beyond that

(( ))

See man hours alone are probably not the only criteria, what scale levels required? They are its very important. But as you see as we flip through the slides the biggest one, the biggest one in my mind. And actually this, the reflection on many project managers is the people skills. If you got the right people skills there people have a lot fun, they deliver just the wonder, if that is the people skills are not there, the project nobody likes a project. When somehow it rolls along and so on a new declares, sayings do not get full payment also on it.

So, I will say probably the foremost thing to look out for is having the right project manager. Having the right team members there, having the right domain expertise there. I am having clarification, real clarity in requirements if those things are there. The (()) to fit you know, you are not in inventing a new pharmaceutical molecular. Something is something people have been doing at before, because your data base your learning and all it again enters history. And once it enters history is there for you to tap on. So, you will be basically look in earlier projects also. You try to see what was their history? If they melt a bridge or something; what was the history? Right go ahead any other question please.

We have a plan for the (( )), but how do we achieve (( )) or you just few experiments or expert these (( )).

No there are like one of techniques. I will be giving you is EVM or value management

when you are paying, the paying, the contractors, you are paying the money for certain amount of work done. He could be stepping on schedule or his species might be steeping and you need to have this distinction clarified very well in your reports. So, I will show you actually how to do this? Something else I would like to suggest you.

Once you get the project book, the project management book, install the m s project on your laptop. So, we will start building some projects also. In fact, if you got your old projects there, trying to (( )) put them on m s project. I will cover some of the basics there, but please install MS project on your system, so that we can interact, we will take a short break and after than we resume again. Thank you.