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**Week - 03**

**ERP**

**Lecture – 13**

**ERP Project Management – Challenges, Risks and Best Practices**

Hello everybody. Today's discussion will be on the topic of ERP Project Management, Challenges, Risks and Best Practices. The thing you need to understand that a ERP implementation project; when we implement ERP software like SAP in a large organization, it is a very complex activity. It takes quite some time may be depending upon the size of the organization it could take from at least 6 months to sometimes couple of years. And if you are talking about global companies, multinationals which are spread across several countries, when you do a ERP implementation, it can take may be 5 or 6 years to complete all the countries in the world.

When you are doing such an exercise, it also involves a lot of people, large team works for these implementations, minimum may be 15 to 20 and maximum again for this multinationals, it can go into several 100s. Sometimes in large projects, you might have 500 people at the peak working on a single implementation project.

So, you can very well understand, there are tremendous amount of dynamics involved; tremendous amount of challenges involved and risks because when you are working with such a complex program and project and involving so many people across countries, multiple cultures etcetera, a lot of things can go wrong.

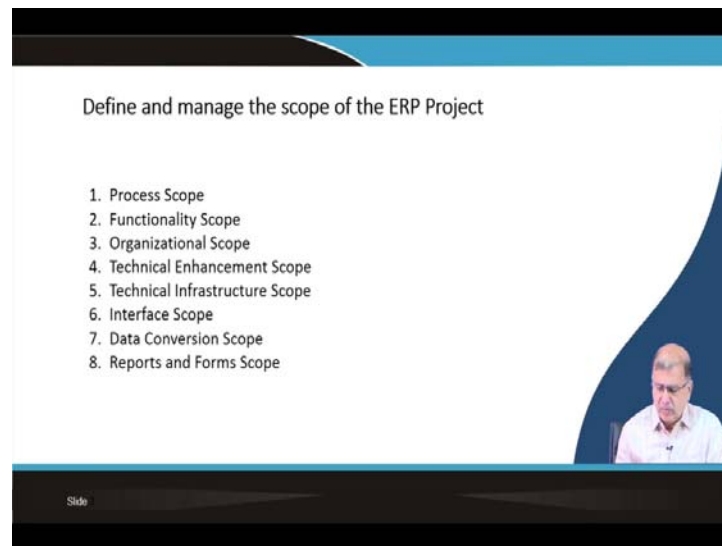
So, that is what as potential manager like you need to understand and know the challenges; the risks and the best practices. Best practices mean the good things that you should try to do when you are implementing a project and at the same time, at the beginning of project its true for any project, we do a extensive risk analysis.

So, as a project manager, one of the first job when you start a project is to do a risk analysis of the project that where things can go wrong, during the course of the project. The duration of the project, the project life cycle can be you know, several months, 6

months to a year for ERP project. We are talking about many months duration, may be 1 year or 2 years.

So, many things can go wrong in this time period. Take for the example, this current situation of coronavirus; COVID, what has happened? So, all the projects which were running during this time, all of them got impacted. I mean nobody say probably in the month of December, or may be in November, when a project had started a ERP implementation and nobody could ever think about something that can go wrong, where the project will stop for several months.

Now, it is already almost in the fourth month and where, people are still you know stuck at places. So, many things and everything is going haywire. So, this is what are the challenges, risks etcetera which a project manager need to know. So, you should understand, what are the various types of risks, which I will try to cover briefly here in my presentation. It will give you an overview of all those aspects .



To start with we should define and manage the scope of the ERP project. So, what is the scope? So, first we need to know, what are the scope of a project which is covered under this ERP or what we are talking about enterprise resource planning software. So, one is the process scope. So, like every business, there were lot of business processes which I have been talking about earlier. So, we need to map out the number of processes, which are there in all the functional areas, which are being covered during that program implementation.

You may not sometimes implement all the modules of SAP for example. Just to save time or we want to start something quickly, maybe you want to do only the Finance and Manufacturing for example; I mean you probably you can do HR etcetera later.

So, not so very critical, not so very important; but Sales, Manufacturing and Finance are important areas. Finance is of course, required because finance is at the core. But things like plant maintenance, quality management etcetera you can delay; HR probably you can delay, but many people do it together. So, anyway, depending on the cost and budget and time etcetera the modules can be selected, but the processes needs to be identified and listed and signed off. These are the processes for which we will do the project.

Functionality - similarly from the process comes the functionality. What are the various functionality we want to capture into this ERP? Some of the functionalities can be better handled by say existing softwares which have been custom built for a specific job, for example payroll.

So, many times, it happens that many organizations have developed their own payroll software and which is working and which can work better than what is being offered by say the ERP software. So, you want to may be retain that payroll and then, build a bridge (interface)connecting it with the SAP software. So, that functionality within SAP software, you will not implement because you want to use an existing software. So, that is little bit of less work for the SAP project implementation.

Organizational scope, - again see the companies can constitute of say head office, then multiple locations, multiple factories, multiple manufacturing units, warehouses, sales offices, branches etcetera. So, you have to decide which of the organization elements will be covered under the scope of the SAP project. Some of the remote, for example, sales offices may be in small towns or villages, where only one person is working and you may not include in your project because when you include a location it means additional cost, effort, connectivity etc. You have to have a network and so many other things like training of the people etcetera, and other things are there. So, we have to decide what is the organizational scope.

Technical enhancement scope - is what sort of enhancements to the SAP software you need. SAP is offering several features, but your organization may be needing something which is not being offered by in SAP product. So, you might have to want to add

something extra, some other new functionalities. So, that is where custom development comes in. So, you have to write codes for that. So, that is extra time and cost. So, you should try to minimize the technical enhancements, try to stick to whatever the SAP product is offering. This is commonly referred as a vanilla implementation where no change is being done to the software product from a technical perspective.

So, whatever the product is offering try to stick to that that is because from a future maintenance perspective, the less the amount of code you write better it is for the software quality because the more you write codes, you can actually produce lot of bugs.

So, you have to test it and then, there could be some errors and there could be some integration problem with the existing company product supplied and the component you have written. So, those can only give rise to a lot of maintenance issues. So, best is to avoid and that is the best practice, minimize and changes to the original product. But if it is required, it is required. So, you have to do it.

Technical infrastructure scope – includes the Servers, Desktops, Data storage systems, back-up devices, Disaster recovery systems, SAP and other supporting softwares, Operating Systems for the servers, connectivity like LAN, WAN etcetera.

Interface scope - is the scope that is how many of the existing software, you want to retain and build a bridge, that is, custom software to connect these softwares with SAP software because all the financial information has to flow into SAP as because finally, your balance sheet, profit and loss and other statutory reports etcetera everything will have to come out of SAP. So, all financial transaction of the organization has to be captured in the SAP Finance module. So, for that you have to build your interface like I said the payroll. If you want to use existing payroll system, fine you can use it; but then, you have to build a connecting program and we call it an interface. So, whatever transaction happens in the payroll like the salary payment etcetera that information goes into the financial books of account like all the credit and debit entries flow to the SAP finance book of accounts.

So, it depends on the scope as to how many such software's you want to connect because for each one of them, you have to build a separate program and writing a separate program again means cost and possibilities of introducing bugs. So, that is what you need to budget.

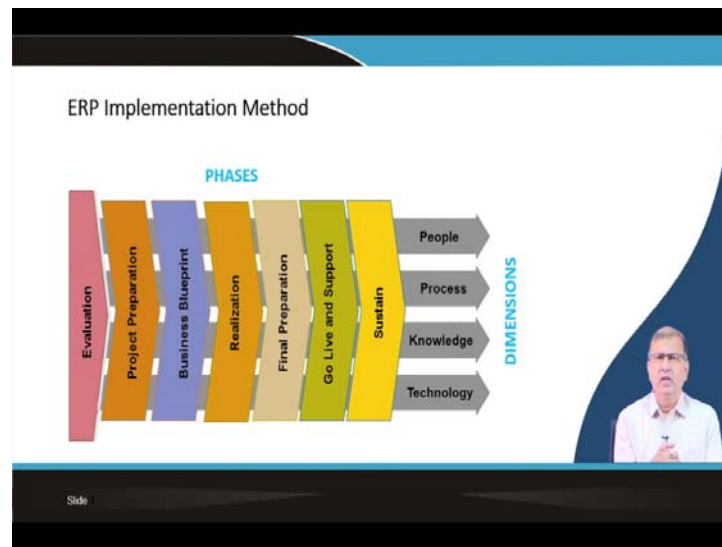
Data conversion scope - Original data which are there in the legacy system from the existing softwares will have to be now transported into SAP. So, that is called data conversion. Conversion, because it has to be converted into a format which you are designing for the new product. Maybe the whole material name codification is changing. So, previously it was known by say a material code of say by the name of the product, now you want to put a number code. Like you have noticed in bank accounts. For example, after the Core banking system, all the banks got computerized; the account numbers got changed. Previously, we had account numbers which were very small, few digits; e.g.6122 was your account number. But nowadays, normally we will find an account number which is very difficult to remember may be 10 digits, 10 character, 14 characters like 110578345678 (example of new bank account numbers).

So, there is a meaning, I mean there is lot of meaning in that design because they are conveying lot of information not for us, but to the bank employees. They from seeing the account number, can find out many things like whether it is a current account; whether it is a savings account etcetera, which region the account belongs to; may be which city; which region. So, many information, intelligent information is hidden in that number code. So, that is why the number code becomes very long of your account. Previously, we just had a small code 6382 that was your account number, which was very easy to remember.

But nowadays, with computerization things have changed. So, that is data conversion where old data which was few 6382 account number will now get converted into an account number which will have 10 characters.

Reports and Forms scope – Reports you know is very important in MIS. The reports has to come out from the SAP system. Normally, SAP, they have their own standard reports which are good enough, but sometimes you want to have reports in your existing template and formats which your management team ( specially Senior Management ) is used to working with. They would like to see the data by columns and rows as per existing reports. If you want to replicate and want to get that same reports in the existing formats from the SAP; then, you will have to write again a program. Similarly, for forms where you need to fill up say your purchase requisition is a form. So, you have to design that form because your company logo will be there, company address will be there, company PAN number will be there.

So, the new form has to be designed say the sales invoice. In sales invoice, again same thing; company logo, company address, company registered PAN number etcetera will have to be inserted. So, many important statutory information has to be there in these forms. So, that has to be designed. So, these are all part of the job and lot of development effort is involved in designing these Reports and Forms. This effort also defines the scope of the project as it is a major cost factor.



Now, the method how do we implement. You see there are lot of phases in these projects and it goes from one phase to other. It starts with Evaluation phase, when you are actually doing the pre-sales, trying to understand the complexity of the job because you have to quote a right price, how much time it will take, how many people you will need etcetera. So, that is a more or less the sales part.

Now, once the sales part is over and you get the order and you get the contract, then you start the project. You start with Project Preparation phase, that is where you do all the risk analysis, building your team, do the training of the team members of the consulting and also your client's team members. Both the team, start to work from a Project office. Training is the most important starting activity in this phase, where you have to train the client's team members in SAP software and it's various features and how it is configured client will need to train your team ( consultant who have come to implement the SAP system ) about their business processes. As you have come from outside, the consultants, you do not know what the business processes are in that company. Suppose they are manufacturing battery for example. So, they will you around the factory, show

you the manufacturing processes, how it starts with the raw material etcetera. And then, they will have to explain in detail all business processes, how the company works, what are the rules and regulations etcetera.

Business blueprint is a design phase, when you are actually designing the To-Be process to be followed by the organization after SAP gets implemented. As-Is refers to the existing process and To-Be is the new process because I have told you in the previous session that something called a Business Process Re-engineering happens. So, when you implement an ERP or SAP, lot of processes undergo change because you are now capturing the best processes, which are there in the SAP product which has been you know gathered from their experience with large multinational corporations like Toyota, General motors, Coca Cola etcetera. So, you get the all their best practices. And you need to change your business process to the best, what is happening in the successful companies. So, that is what we are doing in the design phase. So, my organization today following this business process, but going ahead will adapt these new processes.

So, that becomes the To-Be business process. So, all your stakeholders from the company side like the CFO, the chief of Marketing, the chief of Production, the chief of Purchase everybody will have to agree to the new processes which is being proposed by the product. And you as a consultant, you are telling yes, you should adapt this for your advantage and they will have to understand. And they will have to sign off “yes”, we agree and once that whole thing is signed off, then you move into the Realization Phase which is the Build phase that is where you start actually working on the software.

Now, in SAP is something is known as Customization. Here you do not need actually programmers or coders to customize the software because it is already prebuilt. The software comes ready, everything is written. Now, the functional people, the persons who we call functional resources are the people who are experts in finance, materials management, sales and marketing, manufacturing etcetera. They do not write codes, but they know how the business process works.

So, accordingly, they will now configure the product by writing some formula, selecting some check boxes, putting some values etcetera, like the stock values for example. For each item, they will decide what should be the reorder-point for planning the purchasing

of these materials. These values are estimated based on their process knowledge and what they think would give the maximum benefit to the company.

So, the project team will discuss with the client and jointly decide the best stock level to maintain for each of the costly material. Stock quantity should neither be in excess nor in shortage as had been explained earlier.

So, all that is being done these consultants and it is something known as configuration. Also, you have to create your master data. So, all the Material Master, the Customer Master, Vendor Master; these are all things which need to be created on the computer by capturing all information, like - name, address, phone numbers, contact details, PAN number etcetera. What are the materials they supply etcetera, what are the previous vendor ratings you had in the in your records? Apart from these Master records, you have to enter all your stocks and open items like - open purchase order, open sales order just before the system moves to production. This is called Go-Live, when the organization starts to do transactions in SAP.

But these are the things which have to be done without writing any code. We will not get into too much of details about the ERP software. All you need to know that this is a Realization phase where you do building the actual usable system you are creating for the users (company employees). So, in Blueprint phase you design the system and now you are building it in the Realization phase. Then, Final Preparation phase is when you are getting ready after testing of the system, people are getting trained, data is going to be uploaded etcetera. Infrastructure readiness you have to check, but the main thing here is training of all the Users of the system. So, all the users will need to know how to operate that SAP software.

So, you are a part of materials team and so you will be handling these Materials Management screens. If you are a sales person, you would be viewing or working on transactions like - Creating a sales order, Shipping goods, Billing, Invoice verification etcetera. So, how will you create a sales order? You open a customer name and order quantity etcetera. So, that sort of training is given as to how they will do the transactions because day in and day out the sales person has to create sales order or when you are floating a sales enquiry, how will you float a sales enquiry?



So, all those things are taught during the training because that is what the transactions they will be doing when they actually start working on the SAP system when it goes live. So, Go-Live is the day you shut down your old systems and start working and carrying out your business with the new SAP software. So, that is where the entire company changes over, from their existing systems to the new ERP system. Take the example of banking industry. They moved over from manual systems to the online core banking systems (CBS). So, any branch of the bank you go they are all connected with same software. So, now, you do not have to go to your particular branch, you can go to any branch of your bank and withdraw money. There is no restriction that you have to go to your own particular branch and then only you can get money from there. If you have an account in state bank, you can go to walk into any state bank branch and withdraw money. That is because they are having a common ERP type of software platform and everybody knows how to operate that.

So, when it goes live and everybody starts working on the same software and then, we have last phase that is Sustain which means maintenance because any software you know has to be continuously maintained and upgraded. When a user faces a problem he will raise a problem ticket and then, the maintenance team called Helpdesk team will start working to resolve the problem to keep that software up and running.

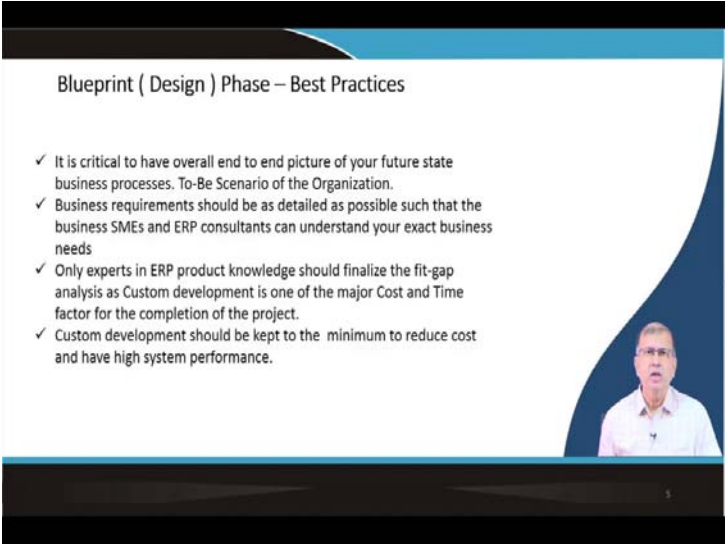
Because otherwise sometimes software hangs or there is an error, it will crash and so many things can go wrong with a IT system. So, there is a team which looks after continuously 24 x 7 to see that your system is up and running.

You have several dimensions which are required as part of this journey. These dimensions are - People, Process, Knowledge and Technology.

I was telling you earlier, how the project is implemented. Knowledgeable persons, and skilled people are required for these projects. People with SAP skills, are involved in developing the new processes which I had talked about before. You have to follow a process step by step for which the consultants follow a methodology.

When you are doing the implementation, you have to go step by step. It cannot be arbitrary knowledge. Of course, you need knowledge of the product and the knowledge of the company/ Organization which is very important. All the team members must be fully aware of how does this company's business work. So, all the business processes of

the company have to be known by the team members of both side the clients as well as the company people and then of course knowledge of technology is there. The major thing is about technology including both software and hardware and knowledge of business processes.



Blueprint ( Design ) Phase – Best Practices

- ✓ It is critical to have overall end to end picture of your future state business processes. To-Be Scenario of the Organization.
- ✓ Business requirements should be as detailed as possible such that the business SMEs and ERP consultants can understand your exact business needs
- ✓ Only experts in ERP product knowledge should finalize the fit-gap analysis as Custom development is one of the major Cost and Time factor for the completion of the project.
- ✓ Custom development should be kept to the minimum to reduce cost and have high system performance.

A small video inset in the bottom right corner shows a man with glasses and a light-colored shirt speaking.

Blue print (design) phase - It is critical to have overall end to end picture of your future state, business process and To-Be scenario. What I was talking about, is you need to know what is my organization that I am designing for the future. Obviously, you want to design something better, something newer. You do not want to stick to your old processes because everybody wants something latest and best, whenever one is investing so much of money buying a new sophisticated world class product.

So, SAP / ERP these are all world class products, best of the things available across the world. So, when you are implementing that at a lot of cost and effort, you want to get some benefits out of this investment. So, you want to have the best processes in the world followed by the leading organizations in the world. So, that is why you have to design new processes and develop proper To-Be scenarios for all the functional areas.

Design is the main thing because unless you design it right whatever you build will not be right. So, you have to think and brain-storm very much. So, that is where here all the top level of the management is involved, all the functional owners, the business process owners, the head of finance department - CFO, the head of marketing - CMO, the head of purchase, the head of manufacturing or head of operations, all of them finally will

have to understand the processes and sign off. They have to give their approval. And only then you can go ahead and design and build as per this signed-off design.

Business requirements should be as detailed as possible such that the business SMEs; SMEs meaning subject matter experts and consultants can understand your exact business needs.

So, only experts in SAP product knowledge should finalize the Fit-Gap analysis as custom development is a major cost and should be minimized to the extent possible. Now, here I am discussing about new developments. This is called Fit-Gap in the sense after the design you can realize that some of the process of this company are very unique. They are not covered in the SAP product. So, that is called we call this as a gap.

So, what is the solution? One of the solution is to write / build a separate program like I was talking. So, the gap has to be fulfilled by building a separate program, but then you have to very carefully analyze it. Is it really required in the new scenario? Can we do without that or can be replace it by a standard process given in SAP?

So, all that discussion should go on because any development you want to do that is a question of cost because you have to have a developer. A developer, will write the codes in maybe 5 days, 6 days or 7 days' etcetera. And then, you have to test etcetera. Testing is again a very big costly component in any software development as it takes lot of time.

So, do a proper analysis that do we need it? If it is absolutely required; yes, we have to do it, but try your best to avoid that. So, the custom development should be kept to the minimum to reduce cost and a high system performance.

Deployment & Go Live – Best Practices

- ✓ System Preparedness – Completeness of all System Integration Testing
- ✓ Completion of all End – User training
- ✓ System performance Testing ( stress testing ) to ensure better performance after go-live
- ✓ Checklist to verify internal and external constituent readiness :
  - Support Help desk in place
  - All IT equipment fully tested
  - Service Level Agreements in place
  - All stakeholders duly trained and made aware

And the more the extra programs you build, the software becomes very heavy. So, the response time gets impacted and any IT system you must have felt many time, when you are working, that the response time is very critical for the user. Like if you are using a phone or when you are doing a banking transaction and the system is slow, it hangs; you feel very irritated, you are not happy. So, you want something you think should move very fast.

Deployment and go live best practices - When you are planning to go live with the system; you need to check for system preparedness, completeness of all system integration testing, completion of all end user training etcetera so, which are very important. In the training plan, the people who are going to use system, must be trained thoroughly because it is a complex software. Learning it is not easy. So, you have to train them in all the transactions that each user would execute in SAP. I had told you earlier that because it is an online system working on real times any mistake a user does, gets immediately reflected across the organization.

And it is hitting your finance books. So, as soon as I entered, I have received 10 materials and instead of 10, I type 100, I have added by mistake one more zero, maybe I was not focusing, I was watching something on my phone by or talking to someone on my phone which we often do. In one hand I am holding the phone and talking while in the other hand, I am doing my typing. And I do a mistake that instead of 10, I hit another zero, making it 100 and that is a major mistake and as soon as I hit enter, it is gone out of your hand. Such things make the training a very critical exercise in the implementation.

Systems performance testing – I was talking about the slow performance etcetera and its importance. So you have to do the load test and performance test, when everybody is working and large volume of much of data is going, how the server would be performing. Too much of data load may make it 'hang'.

You have seen in e-commerce sites or you have read in the newspapers, some day they give lot of discounts and then, plenty of people login across the country, Flipkart etcetera and they crash as the servers cannot handle so much of traffic. So, that load test has to be done which is true for any centralized IT system.

Then, check to verify internal external constituent readiness. You have to have the support Help Desk ready as it is very important because from day one, users will have problems. E.g. he is not able to use a report, he has forgotten his password, he is not able to login, he is not being able to do his transaction, it has become slow etcetera, all sorts of complaints will start coming in as it happens with the new users. So, the help desk should be in place from day one and they should be ready to answer all the questions and solve their problems. Otherwise, users may lose interest and this can place the whole project in jeopardy.

All IT equipment's should be fully tested and their service level agreements for PC's , printers, servers etc. with your vendors in place. All stakeholders should be duly trained and made aware of the changes. So, training, comes in several times. So, everybody must be trained and be made aware. Service level agreements or AMC's (annual maintenance contracts) should be in place because the machines should work, your local PC, your printer because all these gadgets are required for efficient functioning of the software

Continuous Engagement with Stakeholders and Project Leaders (Do's and Don'ts) .....

- **Work closely with Implementer's senior executive (partner / delivery leader) to discuss avenues of improvements in project execution, faster project delivery, resource challenges, solution optimization and scoping issues.**
- **Review risks associated with project delivery, budget overrun, solution quality and Q-gates with vendor executives and propose mitigation plan.**
- **Oversee and advise the periodic (daily or weekly) project leadership meeting. Ensure accurate project progress is reported and discussed. Advice on options to mitigate any known project risks or issues.**

Continuous engagement with stakeholder and project leaders - So, that is during the course of the project do's and do not's, work closely with the implementers senior executive and delivery leaders to discuss avenue of improvements in project execution. As I was telling you, always interact with the senior level people from the client side because they are the people who are giving you decision and if they delay that decision, then your project will get delayed. So, that is another risk.


Review risks associated with project delivery - Budget overruns, solution quality, Q-gates with vendor executives and proposed mitigation plans. These various aspects of risk analysis we will talk few slides later.

You should always interact such that your project does not get delayed because as I told you these are long and complex projects and if the project gets delayed there will be a cost overrun. Finally, it will cost more to the company in case of delay. Management does not like whenever a project manager will ask for more money.

Oversee and advise the periodic (daily or weekly) project leadership meetings - Ensure accurate project progress is reported. Communication is extremely important. So, as a project manager, suppose I am assuming you are as a project manager implementing a project, one of your major task is to regularly communicate your project progress and the status to all stakeholders, specially, to the senior leadership of your client. He is your customer for whom you are implementing this project. So, they should be all kept updated and informed.

Continuous Engagement with Stakeholders and Project Leaders (Do's and Don'ts)

- **Manage disagreements or conflicts between business teams, internal leaderships and systems integrator.** Serve as an independent unbiased advisor to resolve these conflicts and keep the entire project team motivated throughout.
- **Evaluate and qualify project progress report for preparing periodic "steering committee presentation".** Provide expert opinion and advice to the Steering Committee when needed.
- **Ensure that all sign-off and deliverable approval procedures are followed throughout the project organization.**



Continuous engagement with stakeholders and Project leaders (Do's and Don'ts) - Continue to manage disagreement of conflicts between business teams, internal leadership and systems integrator. I mean this is pretty obvious. Evaluate and quality project progress report for preparing periodic steering committee meetings. As I told you just now, you should always communicate, communicate and communicate.

See that everything is ready when steering committee meeting takes place because major decisions are taken during steering committee meetings and ensure that all sign-offs and deliverable approvals are obtained and procedures are followed throughout because it is very important to get all documents signed-off.

Because later on people can deny as no, I did not tell you this etc. So, there can be disputes. But, if you have a signed off document then the risk can be avoided

ERP Challenges...( 1 of 3 )

**Project Implementation Challenges**

- ✓ Scope Changes
- ✓ Huge Budget
- ✓ Long Timeline
- ✓ Process redesign challenges
- ✓ Unrealistic expectation
- ✓ Complex Interfaces




Project Implementation challenges; - Scope change; Budget change, Long timelines. I have discussed Process Redesign Challenges, Unrealistic Expectations and Complex Interfaces. So, when there is an unrealistic expectation from the customer, they want something you know they always want the sky but as it is not possible you have to manage their expectations.

Then process redesign could be difficult sometimes as all need to get convinced of the benefits of the new processes. These challenges are faced by the project manager because if anything you would agree to whatever the customer is asking, you will be in a major problem because it will take more time, cost more and the project will go in a loss.

ERP Challenges...( 2 of 3 )

**Support / Maintenance Challenges**

- ✓ Getting right people
- ✓ Managing multiple vendors
- ✓ Managing regular upgrades
- ✓ Technology obsolescence
- ✓ Large application portfolio
- ✓ Managing transition
- ✓ Realizing benefits



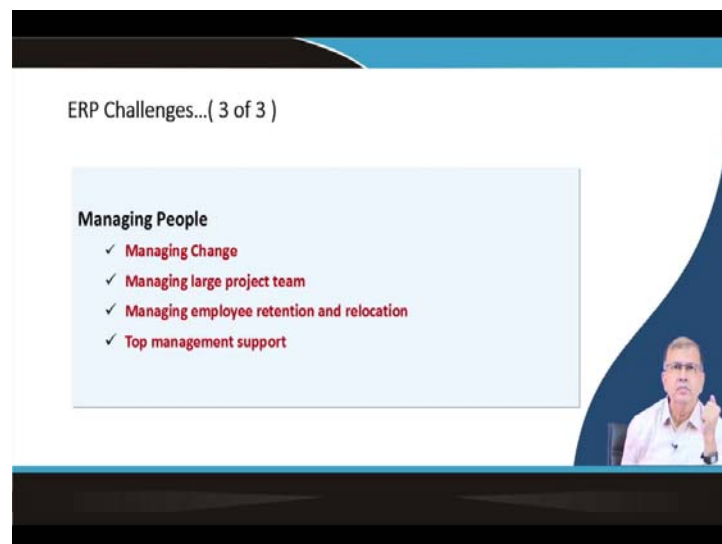


Usually, these projects run on a fixed fee basis. So, they (customer) have told you to deliver this project in one year and they will pay you so many crores and that amount is fixed. Now, if you take more time, spend more money then that is your loss as a consultant. So, you have to keep that in mind.

Support maintenance challenges - Getting right people knowledge here is very important. The skill level and the knowledge of SAP experts, is very important. You cannot have untrained people to do this job of managing multiple vendors and managing regular upgrades. Softwares keep changing; every 1 or 2 years, you know the software companies keep updating their product. So, that is also another thing which has to be handled. Technology obsolescence - Technology also gets back dated; you know in IT industry it happens very often. So, products keep changing.

Managing transition is moving over from the old system to the new system and this can be a big challenge when handling large number of application portfolio. We will discuss this in a later section.

Realizing benefits - Customer will ask you, I did all these implementations and spend so much money, what is my business benefit. You have to give him the business case and also explain how to estimate the business benefits.



Managing people - One of the most difficult thing in such projects is managing people and some of these will be discussed now.

e.g. Managing change - Because it is a change management issue as people now have to work in a new system, they have to acquire new knowledge and they have to know little bit about the SAP software. So, all that can become difficult specially, if the people are elderly people and not so computer savvy.

So, they will have some problem with the computer working etcetera and people tend to give a resistance to learning new technology. Managing this resistance to change is your challenge.

Managing a large project team is always a challenge. Managing employee retention relocation due to the project are also resisted often by employees. Finally, it is very important to get top management support and sometimes this can become a challenge for the project manager.

So, these are the few things which you have to keep in mind as a project manager.



Reasons for ERP project risk; - There are several items which are can happen to cause project risk. I will briefly run through this list.

So, from the left its organization politics ok, we will not discuss that politics part.

Computer literacy of employees; so, employees should be computer literate, if not that is a problem.

Connectivity in remote location say any connectivity, it is all about networks. So, LAN WAN etcetera of course, so connectivity is a risk.

Lack of top management support, its it is a very big risk; the management has to support your project.

Frequent change in scope, if the scope keeps changing, then project will get delayed and it will increase the cost. So, you should always avoid this scope change.

Aggressive time frame, - the time frame may be very aggressive, then, it can be a risk because then, people have to work very hard, extra weekends etcetera and that can become a problem.

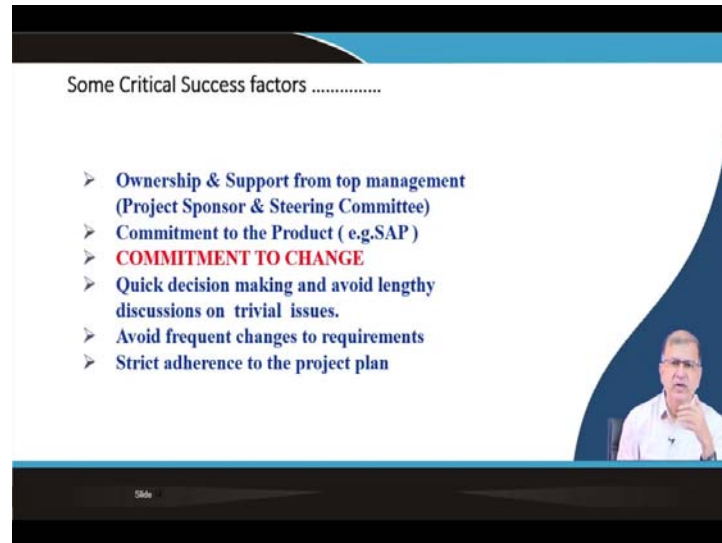
Inexperienced core team, if the team from the company side, they are not experienced enough, they will have inadequate knowledge about the business processes. In that case you will not get proper design inputs. So, that is a risk parameter.

Multiple projects - if in that company there are several projects running simultaneously people will give less importance to this project and that is a risk.



Five Step Project Risk Management Approach: - You have to find a potential risk element, then do an impact analysis and estimate the probability of occurrence and finally, you have to prioritize the risk to know which risk can happen and has a higher probability of occurrence.

And then, you have to have a risk mitigation plan. So, for every risk, you must have a mitigation plan if this happens and how will I handle the situation that is all it means as a mitigation plan.



Some of the critical success factors are ownership and support from top management, again this has been said many times. Commitment to the product of course, you have to give commitment to the product you are investing in, like SAP for example. Commitment to change that is very important. So, the whole organization is going to change, the people will need to change, the way they work is going to change etcetera the business process will get changed etc.

So, employees must agree for a commitment to change. If they resist change, the project will not succeed. If we go back to the example of computerization of public sector banks, where the employee union had resisted computerization of banks. So, they were resisting that change. But finally, it was overcome otherwise you know the banking would have remained something very old fashioned. With all manual work, customers would have to stand in a queue, go to the teller, give a cheque and then stand in a queue and then, they will give you cash. And all that would be done only during banking hours.

So, in working day between 10 to 2, you have to go the bank for your cash. But now it is 24 by 7, anytime you go to an ATM, you can withdraw cash and all that has been possible because there was a big change.

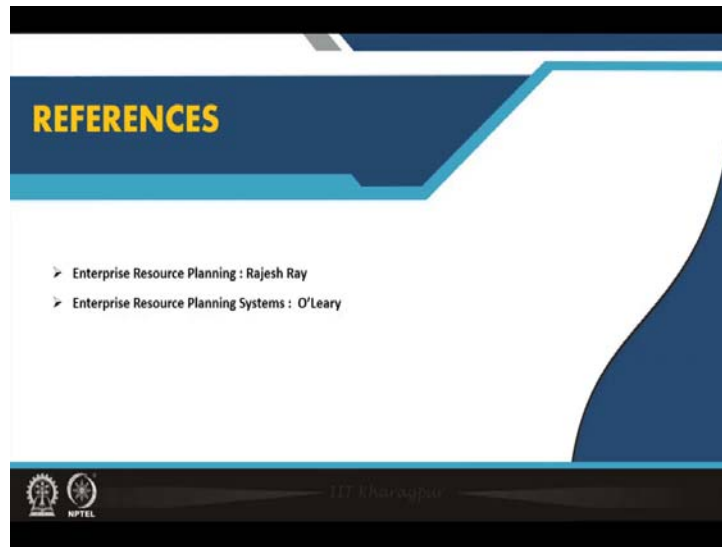
Quick decision making and avoid lengthy discussions on trivial issues. You should take quick decision because you are all bound by the project time lines which are usually very tight. Delays will result in project loss.

Avoid frequent change to requirement. So, scope change as I told earlier is a major risk. Because many people will come and request can you do me a small thing, it is a favor etcetera, but you have to avoid all that otherwise you will not be able to control your project in time, deliver it in time. Strict adherence to project plans is a must.



So, some ERP recent trends; ERP vendors are moving into enterprise application areas, we will discuss it later. CRM, SRM, PLM, SCM we will cover that. SME clients are everybody's focus. Vendors are going vertical.

This is general knowledge about ERP, the environment. Newer types of ERP projects are emerging; migration, consolidation, harmonization etcetera. So, when two businesses join one is having one ERP, the other ERP that is a different type of project management problem altogether. But these things happen very frequently; migrations, takeovers, mergers etcetera.



And these are the books; same books are Enterprise Resource Planning, Rajesh Ray and by O'Leary. All are these are covered in you on the text book, you can go through that.

Thank you very much.