

# RESOURCE MANAGEMENT PROFESSIONAL INSTITUTE

**COURSE MANUAL**

**FOR**

**PROJECT MANAGEMENT**

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***MODULE FOUR***

**PROJECT MANAGEMENT  
TECHNIQUES**

## LESSON ONE

# Project Management Processes

### Introduction

Project management is one of the critical processes of any project. This is due to the fact that project management is the core process that connects all other project activities and processes together.

When it comes to the activities of project management, there are plenty. However, these plenty of project management activities can be categorized into five main processes.

Let's have a look at the five main project management processes in detail.

### 1 - Project Initiation

Project initiation is the starting point of any project. In this process, all the activities related to winning a project takes place. Usually, the main activity of this phase is the pre-sale.

During the pre-sale period, the service provider proves the eligibility and ability of completing the project to the client and eventually wins the business. Then, it is the detailed requirements gathering which comes next.

During the requirements gathering activity, all the client requirements are gathered and analysed for implementation. In this activity, negotiations may take place to change certain requirements or remove certain requirements altogether.

Usually, project initiation process ends with requirements sign-off.

### 2 - Project Planning

Project planning is one of the main project management processes. If the project management team gets this step wrong, there could be heavy negative consequences during the next phases of the project.

Therefore, the project management team will have to pay detailed attention to this process of the project.

In this process, the project plan is derived in order to address the project requirements such as, requirements scope, budget and timelines. Once the project plan is derived, then the project schedule is developed.

Depending on the budget and the schedule, the resources are then allocated to the project. This phase is the most important phase when it comes to project cost and effort.

### 3 - Project Execution

After all paperwork is done, in this phase, the project management executes the project in order to achieve project objectives.

When it comes to execution, each member of the team carries out their own assignments within the given deadline for each activity. The detailed project schedule will be used for tracking the project progress.

During the project execution, there are many reporting activities to be done. The senior management of the company will require daily or weekly status updates on the project progress.

In addition to that, the client may also want to track the progress of the project. During the project execution, it is a must to track the effort and cost of the project in order to determine whether the project is progressing in the right direction or not.

In addition to reporting, there are multiple deliveries to be made during the project execution. Usually, project deliveries are not onetime deliveries made at the end of the project. Instead, the deliveries are scattered throughout the project execution period and delivered upon agreed timelines.

### 4 - Control and Validation

During the project life cycle, the project activities should be thoroughly controlled and validated. The controlling can be mainly done by adhering to the initial protocols such as project plan, quality assurance test plan and communication plan for the project.

Sometimes, there can be instances that are not covered by such protocols. In such cases, the project manager should use adequate and necessary measurements in order to control such situations.

Validation is a supporting activity that runs from first day to the last day of a project. Each and every activity and delivery should have its own validation criteria in order to verify the successful outcome or the successful completion.

When it comes to project deliveries and requirements, a separate team called 'quality assurance team' will assist the project team for validation and verification functions.

### 5 - Closeout and Evaluation

Once all the project requirements are achieved, it is time to hand over the implemented system and closeout the project. If the project deliveries are in par with the acceptance criteria defined by the client, the project will be duly accepted and paid by the customer.

Once the project closeout takes place, it is time to evaluate the entire project. In this evaluation, the mistakes made by the project team will be identified and will take necessary steps to avoid them in the future projects.

During the project evaluation process, the service provider may notice that they haven't gained the expected margins for the project and may have exceeded the timelines planned at the beginning.

In such cases, the project is not a 100% success to the service provider. Therefore, such instances should be studied carefully and should take necessary actions to avoid in the future.

### **Conclusion**

Project management is a responsible process. The project management process connects all other project activities together and creates the harmony in the project.

Therefore, the project management team should have a detailed understanding on all the project management processes and the tools that they can make use for each project management process.



## LESSON TWO

# Project Management Tools

### Introduction

Project management is one of the high-responsibility tasks in modern organizations. Project management is used in many types of projects ranging from software development to developing the next generation fighter aircrafts.

In order to execute a project successfully, the project manager or the project management team should be supported by a set of tools.

These tools can be specifically designed tools or regular productivity tools that can be adopted for project management work.

The use of such tools usually makes the project managers work easy as well as it standardizes the work and the routine of a project manager.

Following are some of those tools used by project managers in all domains:

### Project Plan

All the projects that should be managed by a project manager should have a project plan. The project plan details many aspects of the project to be executed.

First of all, it details out the project scope. Then, it describes the approach or strategy used for addressing the project scope and project objectives.

The strategy is the core of the project plan. The strategy could vary depending on the project purpose and specific project requirements.

The resource allocation and delivery schedule are other two main components of the project plan. These detail each activity involved in the project as well as the information such as who executes them and when.

This is important information for the project manager as well as all the other stakeholders of the project.

### Milestone Checklist

This is one of the best tools the project manager can use to determine whether he or she is on track in terms of the project progress.

The project manager does not have to use expensive software to track this. The project manager can use a simple Excel template to do this job.

The milestone checklist should be a live document that should be updated once or twice a week.

## Gantt Chart

Gantt chart illustrates the project schedule and shows the project manager the interdependencies of each activity. Gantt charts are universally used for any type of project from construction to software development.

Although deriving a Gantt chart looks quite easy, it is one of the most complex tasks when the project is involved in hundreds of activities.

There are many ways you can create a Gantt chart. If the project is small and simple in nature, you can create your own Gantt chart in Excel or download an Excel template from the Internet.

If the project has a high financial value or high-risk exposure, then the project manager can use software tools such as MS Project.

## Project Management Softwares

With the introduction of computer technology, there have been a number of software tools specifically developed for project management purpose. MS Project is one such tool that has won the hearts of project managers all over the world.

MS Project can be used as a standalone tool for tracking project progress or it can be used for tracking complex projects distributed in many geographical areas and managed by a number of project managers.

There are many other software packages for project management in addition to MS Project. Most of these new additions are online portals for project management activities where the project members have access to project details and progress from anywhere.

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## Project Reviews

A comprehensive project review mechanism is a great tool for project management. More mature companies tend to have more strict and comprehensive project reviews as opposed to basic ones done by smaller organizations.

In project reviews, the project progress and the adherence to the process standards are mainly considered. Usually, project reviews are accompanied by project audits by a 3rd party (internal or external).

The non-compliances and action items are then tracked in order to complete them.

## Delivery Reviews

Delivery reviews make sure that the deliveries made by the project team meet the customer requirements and adhere to the general guidelines of quality.

Usually, a 3rd party team or supervisors (internal) conduct the delivery review and the main stakeholders of the project delivery do participate for this event.

The delivery review may decide to reject the delivery due to the quality standards and non-compliances.

### Score Cards

When it comes to performance of the project team, a scorecard is the way of tracking it. Every project manager is responsible of accessing the performance of the team members and reporting it to the upper management and HR.

This information is then used for promotion purposes as well as human resource development. A comprehensive score card and performance assessment can place the team member in the correct position.

### Conclusion

A project manager cannot execute his/her job without a proper set of tools. These tools do not have to be renowned software or something, but it can pretty well be simple and proven techniques to manage project work.

Having a solid set of project management tools always makes project managers' work pleasurable and productive.



## LESSON THREE

# Project Management Triangle

### Introduction

The project management triangle is used by managers to analyze or understand the difficulties that may arise due to implementing and executing a project. All projects irrespective of their size will have many constraints.

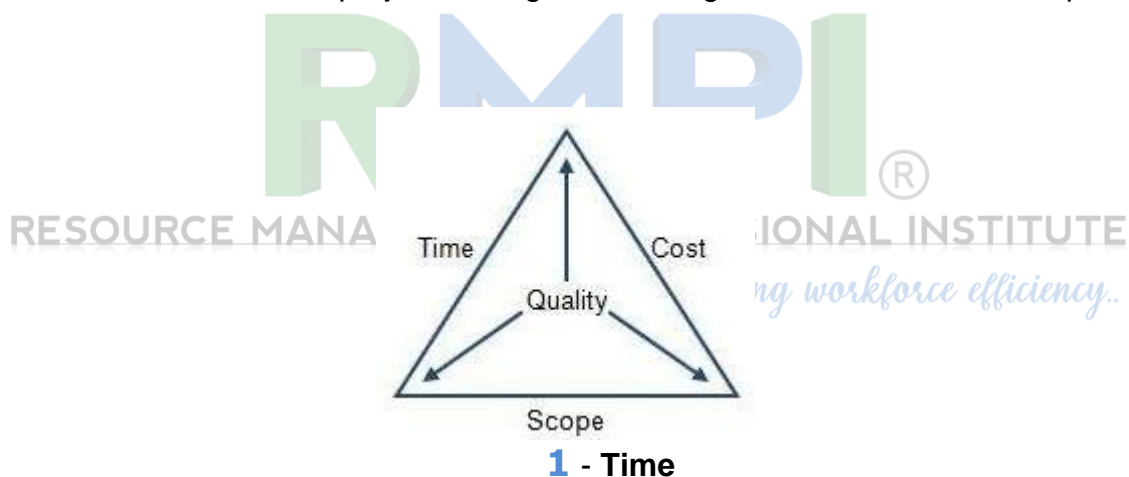
Although there are many such project constraints, these should not be barriers for successful project execution and for the effective decision making.

There are three main interdependent constraints for every project; time, cost and scope. This is also known as Project Management Triangle.

Let's try to understand each of the element of project triangle and then how to face challenges related to each.

### The Three Constraints

The three constraints in a project management triangle are time, cost and scope.



A project's activities can either take shorter or longer amount of time to complete. Completion of tasks depends on a number of factors such as the number of people working on the project, experience, skills, etc.

Time is a crucial factor which is uncontrollable. On the other hand, failure to meet the deadlines in a project can create adverse effects. Most often, the main reason for organizations to fail in terms of time is due to lack of resources.

### 2 - Cost

It's imperative for both the project manager and the organization to have an estimated cost when undertaking a project. Budgets will ensure that project is developed or implemented below a certain cost.



Sometimes, project managers have to allocate additional resources in order to meet the deadlines with a penalty of additional project costs.

### 3 - Scope

Scope looks at the outcome of the project undertaken. This consists of a list of deliverables, which need to be addressed by the project team.

A successful project manager will know to manage both the scope of the project and any change in scope which impacts time and cost.

#### Quality

Quality is not a part of the project management triangle, but it is the ultimate objective of every delivery. Hence, the project management triangle represents implies quality.

Many project managers are under the notion that 'high quality comes with high cost', which to some extent is true. By using low quality resources to accomplish project deadlines does not ensure success of the overall project.

Like with the scope, quality will also be an important deliverable for the project.

#### Six stages of Project Management

A project undergoes six stages during its life cycles and they are noted below:

- **Project Definition** - This refers to defining the objectives and the factors to be considered to make the project successful.
- **Project Initiation** - This refers to the resources as well as the planning before the project starts.
- **Project Planning** - Outlines the plan as to how the project should be executed. This is where project management triangle is essential. It looks at the time, cost and scope of the project.
- **Project Execution** - Undertaking work to deliver the outcome of the project.
- **Project Monitoring & Control** - Taking necessary measures, so that the operation of the project runs smoothly.
- **Project Closure** - Acceptance of the deliverables and discontinuing resources that were required to run the project.

#### Overcoming Challenges to Project Constraints

It is always a requirement to overcome the challenges related to the project triangle during the project execution period. Project managers need to understand that the three constraints outlined in the project management triangle can be adjusted.

The important aspect is to deal with it. The project manager needs to strike a balance between the three constraints so that quality of the project will not be compromised.

To overcome the constraints, the project managers have several methods to keep the project going. Some of these will be based on preventing stakeholders from changing the scope and maintaining limits on both financial and human resources.

A project manager's role is evolved around responsibility. A project manager needs to supervise and control the project from the beginning to the closure.

### **The following factors will outline a project manager's role:**

- ▣ The project manager needs to define the project and split the tasks amongst team members. The project manager also needs to obtain key resources and build teamwork.
- ▣ The project manager needs to set the objectives required for the project and work towards meeting these objectives.
- ▣ The most important activity of a project manager is to keep stakeholders informed on the progress of the project.
- ▣ The project manager needs to assess and carefully monitor risks of the project.

### **Skills Required for a Project Manager**

In order to overcome the challenges related to project triangle and meet the project objectives, the project manager needs to have a range of skills, which includes:

- ▣ Leadership
- ▣ Managing people
- ▣ Negotiation
- ▣ Time management
- ▣ Effective communication
- ▣ Planning
- ▣ Controlling
- ▣ Conflict resolution
- ▣ Problem solving

## Conclusion

Project management is very often represented on a triangle. A successful project manager needs to keep a balance between the triple constraints so that the quality of the project or outcome is not compromised.

There are many tools and techniques that are available in order to face the challenges related to the three constraints. A good project manager will use appropriate tools in order to execute the project successfully.



## LESSON FOUR

# Project Manager Goals

### Introduction

Every organization requires good leadership in order to carry out all their projects successfully. This requires the organization to appoint efficient project managers to carry out various tasks, and of course, to guide and lead the project management team and get them to a point, where they have effectively completed any given project at hand, taking into account a whole load of factors.

In order to understand how project management can run smoothly, it is important to first identify the role and the tasks carried out by the project manager. So who is a project manager and why is he/she so important?

### The Role of a Project Manager

The role of a project manager basically involves handling all aspects of the project.

This includes not just the logistics but also the planning, brainstorming and seeing to the overall completion of the project while also preventing glitches and ensuring that the project management team works well together.

### The Goals of a Project Manager

Following should be the the main goals for a project manager, but they are not limited to the listed ones because it very much depends on the situation:

#### (1) Deadlines

A project manager must always be able to carry out his role in a very effective manner.

This means that in most cases he/she would have to run against time with the clock ticking away. All projects would have deadlines, so it is the duty of a project manager to complete the project by this given date.

It should be noted that although the project manager and his team may draw up a schedule at the outset that may seem perfect, as time goes on you will find that the requirements may change, and the projects may require new strategies to be implemented and more planning to be carried out.

Time therefore could be a big obstacle for a project manager achieving his/her goal. As the project manager you should never lose sight of the deadline, your role would be to keep pushing your team to finish the work and deliver on time.

Remember that your clients' satisfaction is your number one priority.

## (2) Client Satisfaction

Satisfaction of the client, however, does not mean that you rush to finish the work on time without ensuring that standards are met.

The reputation of your organization would depend on the quality of the delivery of your projects. This is another factor you should not lose sight of throughout the project.

Your role would also be to keep reminding the team members that quality is key.

## (3) No Budget Overrun

No project can be started off without the preparation of the budget. Although this is just a forecast of the costs that would be incurred, it is essential that this budget is prepared after careful research and comparing prices to get the best.

You would need to consider ways of cutting costs while also ensuring that you meet the needs of the client as well as meeting the standards expected of your organization.

This budget must include all costs with regard equipment, labor and everything else. You then need to try and always stick to the budget, although it's always best to leave some allowance for a few 100 dollars for any additional expenses that may arise.

## (4) Requirements Coverage

Another goal of a project manager involves meeting all requirements of the client. You would need to therefore have all specifications at hand and go through them every once in a while to ensure that you are on track.

If there is confusion as to any requirements, it would be best for you to get them cleared at the very beginning.

## (5) Team Management

While you would have to ensure that all aspects of the project are maintained, you are also responsible as project manager for the happiness of your team.

You need to keep in mind that it is the incentives and encouragement provided to them that will make them work harder and want to complete the work on time, thereby helping you reach your goals.

If the team members are unhappy with the way things are being carried out, productivity will also in turn decrease, pulling you further away from achieving your goals. It is essential therefore to always maintain a warm friendly relationship with them.

The communication within the team should be very effective. They should be willing to voice out their opinions while you listen to their suggestions and consider including them in the project.

This is after all a team effort. Your goals with regard to the project are also their goals.

### **Conclusion**

The role of a project manager is therefore no easy task. It involves taking up a lot of responsibility as each of the goals of the project must be met without making too many sacrifices.

If these goals are outlined to the project management team at the very beginning, there is no way for the delivery of the goals to be delayed in any way as everyone will always be aware of what they need to achieve and by when.



## LESSON FIVE

# Project Portfolio Management

### Introduction

When there are many projects run by an organization, it is vital for the organization to manage their project portfolio. This helps the organization to categorize the projects and align the projects with their organizational goals.

Project Portfolio Management (PPM) is a management process with the help of methods aimed at helping the organization to acquire information and sort out projects according to a set of criteria.

### Objectives of Project Portfolio Management

Same as with financial portfolio management, the project portfolio management also has its own set of objectives. These objectives are designed to bring about expected results through coherent team players.

When it comes to the objectives, the following factors need to be outlined.

- ▣ The need to create a descriptive document, which contains vital information such as name of project, estimated timeframe, cost and business objectives.
- ▣ The project needs to be evaluated on a regular basis to ensure that the project is meeting its target and stays in its course.
- ▣ Selection of the team players, who will work towards achieving the project's objectives.

### Benefits of Project Portfolio Management

Project portfolio management ensures that projects have a set of objectives, which when followed brings about the expected results. Furthermore, PPM can be used to bring out changes to the organization which will create a flexible structure within the organization in terms of project execution. In this manner, the change will not be a threat for the organization.

The following benefits can be gained through efficient project portfolio management:

- ▣ Greater adaptability towards change.
- ▣ Constant review and close monitoring brings about a higher return.
- ▣ Management's perspectives with regards to project portfolio management are seen as an 'initiative towards higher return'. Therefore, this will not be considered to be a detrimental factor to work.

- ▣ Identification of dependencies is easier to identify. This will eliminate some inefficiency from occurring.
- ▣ Advantage over other competitors (competitive advantage).
- ▣ Helps to concentrate on the strategies, which will help to achieve the targets rather than focusing on the project itself.
- ▣ The responsibilities of IT are focused on part of the business rather than scattering across several.
- ▣ The mix of both IT and business projects are seen as contributors to achieving the organizational objectives.

### **Project Portfolio Management Tools**

There are many tools that can be used for project portfolio management. Following are the essential features of those tools:

- ▣ A systematic method of evaluation of projects.
- ▣ Resources need to be planned.
- ▣ Costs and the benefits need to be kept on track.
- ▣ Undertaking cost benefit analysis.
- ▣ Progress reports from time to time.
- ▣ Access to information as and when its required.
- ▣ Communication mechanism, which will take through the information necessary.

### **Techniques Used to Measure PPM**

There are various techniques, which are used to measure or support PPM process from time to time. However, there are three types of techniques, which are widely used:

- ▣ Heuristic model.
- ▣ Scoring technique.
- ▣ Visual or Mapping techniques.

The use of such techniques should be done in consideration of the project and organizational objectives, resource skills and the infrastructure for project management.



## Why Project Managers to Focus on PPM?

PPM is crucial for a project to be successful as well as to identify any back lags if it were to occur. Project Managers often face a difficult situation arising from lack of planning and sometimes this may lead to a project withdrawal.

It's the primary responsibility of project managers to ensure that there are enough available resources for the projects that an organization undertakes. Proper resources will ensure that the project is completed within the set timeline and delivered without a compromise on quality.

Project managers also may wish to work on projects, which are given its utmost priority and value to an organization. This will enable project managers to deliver and receive support for quality projects that they have undertaken. PPM ensures that these objectives of the project management will be met.

## The Five Question Model



The five question model of project portfolio management illustrates that the project manager is required to answer five essential questions before the inception as well as during the project execution.

The answers to these questions will determine the success of the implementation of the project.

## Conclusion

Project portfolio management is aimed at reducing inefficiencies that occur when undertaking a project and eliminating potential risks, which can occur due to lack of information or systems available.

It helps the organization to align its project work to meet the projects whilst utilizing its resources to the maximum.

Therefore, all the project managers of the organization need to have an awareness of the organizational project portfolio management in order to contribute to the organizational goals when executing respective projects.



## LESSON SIX

# Project Quality Plan

### Introduction

Every project delivers something at the end of the project execution. When it comes to the project initiation, the project management and the client collaboratively define the objectives and the deliveries of the project together with the completion timelines.

During the project execution, there are a number of project deliveries made. All these deliveries should adhere to certain quality standards (industry standards) as well as specific client requirements.

Therefore, each of these deliveries should be validated and verified before delivering to the client. For that, there should be a quality assurance function, which runs from start to the end of the project.

When it comes to the quality, not only the quality of the deliveries that matter the most. The processes or activities that produce deliverables should also adhere to certain quality guidelines as well.

As a principle, if the processes and activities that produce the deliverables do not adhere to their own quality standards (process quality standards), then there is a high probability that deliverables not meeting the delivery quality standards.

To address all the quality requirements, standards and quality assurance mechanisms in a project, a document called 'project quality plan' is developed by the project team. This plan acts as the quality bible for the project and all the stakeholders of the project should adhere to the project quality plan.

### The Components of a Project Quality Plan

Depending on the nature of the industry and the nature of the project, the components or the areas addressed by a quality plan may vary. However, there are some components that can be found in any type of quality plan.

Let's have a look at the most essential attributes of a project quality plan.

#### Responsibility of Management

This describes how the management is responsible for achieving the project quality. Since management is the controlling and monitoring function for the project, project quality is mainly a management responsibility.

Document Management and Control

Documents are the main method of communication in project management. Documents are used for communication between the team members, project management, senior management and the client.

Therefore, the project quality plan should describe a way to manage and control the documents used in the project. Usually, there can be a common documentation repository with controlled access in order to store and retrieve the documents.

### **Requirements Scope**

The correct requirements to be implemented are listed here. This is an abstraction of the requirements sign-off document. Having requirements noted in the project quality plan helps the quality assurance team to correctly validate them.

This way, quality assurance function knows what exactly to test and what exactly to leave out from the scope. Testing the requirements that are not in the scope may be a waste for the service provider.

### **Design Control**

This specifies the controls and procedures used for the design phase of the project. Usually, there should be design reviews in order to analyse the correctness of the proposed technical design. For fruitful design reviews, senior designers or the architects of the respective domain should get involved. Once the designs are reviewed and agreed, they are signed-off with the client.

With the time, the client may come up with changes to the requirements or new requirements. In such cases, design may be changed. Every time the design changes, the changes should be reviewed and signed-off.

### **Development Control and Rigor**

Once the construction of the project starts, all the processes, procedures and activities should be closely monitored and measured. By this type of control, the project management can make sure that the project is progressing in the correct path.

### **Testing and Quality Assurance**

This component of the project quality plan takes precedence over other components. This is the element, which describes the main quality assurance functions of the project. This section should clearly identify the quality objectives for the project and the approach to achieve them.

### **Risks & Mitigation**

This section identifies the project quality risks. Then, the project management team should come up with appropriate mitigation plans in order to address each quality risk.

## Quality Audits

For every project, regardless of its size or the nature, there should be periodic quality audits to measure the adherence to the quality standards. These audits can be done by an internal team or an external team.

Sometimes, the client may employ external audit teams to measure the compliance to standards and procedures of the project processes and activities.

## Defect Management

During testing and quality assurance, defects are usually caught. This is quite common when it comes to software development projects. The project quality plan should have guidelines and instructions on how to manage the defects.

## Training Requirements

Every project team requires some kind of training before the project commences. For this, a skill gap analysis is done to identify the training requirements at the project initiation phase.

The project quality plan should indicate these training requirements and necessary steps to get the staff trained.

## Conclusion

Project quality plan is one of the mandatory documents for any type of project.

As long as a project has defined objectives and deliverables, there should be a project quality plan to measure the delivery and process quality.

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## LESSON SEVEN

# Project Records Management

### Introduction

Project management is an approach, which helps managers to manage the projects. Project management also means using controls in place to meet the deadlines and other requirements such as cost of the project.

These controls involve proper and effective recording of project management activities. Record management is a systematic approach for organizing, planning and tracking documents during the course of the project execution.

### A-Z of Project Record Management

A record system is a systematic process in which an organization determines the following considerations, activities and characteristics:

- ▣ The type of information that should be recorded.
- ▣ A process for recording data.
- ▣ Handling and collecting of records.
- ▣ The time period for retention and storage.
- ▣ Disposal or protecting records, which relate to external events.
- ▣ Elements in a record management system.
- ▣ Content analysis, which states or describes the record system.
- ▣ A file plan, which indicates the kind of record that is required for each project.
- ▣ A compliance requirement document, which will outline the IT procedures that everyone needs to follow. This will ensure that team members are fully compliant.
- ▣ A method, which collects out dated documents. These should be done across all record sources such as e-mails, file servers, etc.
- ▣ A method for auditing records.
- ▣ A system, which captures the record data.
- ▣ A system, which ensures monitoring and reporting in the way which records are being held.

## Three Stages of Records

In the project record management process, there are three distinct stages. These stages have many other activities involved in order to complete and accomplish the objectives for each stage.

The stages are:

- ▣ The creation of records
- ▣ Maintenance of records
- ▣ Storage and retrieval of records

Let's have a look at each of the stage in detail.

### Creating Records

This refers to the underlying reason as to why the record is being created. This could be for a receipt or for an inventory control report or some other reason.

The primary objective of project record management is to determine the flow of the record handling once the record is created. When it comes to creating records, the following questions should be answered.

- ▣ Who will view the record?
- ▣ Who will be the final owner of the record? Who is responsible for storing the record?
- ▣ Who is responsible for storing the record?

### Maintaining Records

Developing an operation to store the records refers to maintaining the records. The access levels to the records should be defined at this stage and should take all necessary steps in order to avoid the records getting into the wrong hands.

Proper compliance procedures and security measures need to be in place to avoid misusing of.

### Records Storing and Retrieval

Storing of records could refer to manual storage of documents as well as digital storage. Project managers need to ensure that the records are returned in the way it was borrowed. Maintaining records also refers to the amount of time that records can be maintained.

Some organizations may retain records up to six years whilst others less amount of years. If records are saved digitally, proper folders need to be created. Once

created, the older documents need to be archived so that hard drive space is retained.

### **An Insight to Record Management Planning**

Records, which are collated needs to be planned. The following outlines the steps that management needs to take to ensure record planning process is successful.

- ▣ Identification of roles, which ensure that records are managed properly
- ▣ Allocating dedicated roles or appointing dedicated people to categorize the records, which are available in an organization.
- ▣ Appointing IT professionals to implement systems, which maintain and support record management.
- ▣ Managers need to make sure that the team members are aware of the procedures in place for record management.
- ▣ The record management process needs to analyze the content of the documents, which are to be saved.
- ▣ Implement a file plan, which will store the different kinds of files in an organization.
- ▣ Develop retention schedules, which could vary from one organization to another depending on the activity taking place.
- ▣ Design effective record management solutions.
- ▣ Planning of how content can be moved to record methods.
- ▣ Develop a plan where e-mail integration could be made.
- ▣ Plan a compliance procedure for social content.
- ▣ Develop compliance procedures that align the objectives of project record system.

### **Conclusion**

A record is a document or an electronic storage of data in an organization which acts as evidence or a guideline. A project record management is a systematic process, which allows people to retain records for future use.

It outlines the details which are relevant to the project. Hence, project record management needs to be monitored and retained in a careful manner.



## LESSON EIGHT

# Project Scope Definition

### Introduction

When it comes to project planning, defining the project scope is the most critical step. In case if you start the project without knowing what you are supposed to be delivering at the end to the client and what the boundaries of the project are, there is a little chance for you to success. In most of the instances, you actually do not have any chance to success with this unorganized approach.

If you do not do a good job in project scope definition, project scope management during the project execution is almost impossible.

The main purpose of the scope definition is to clearly describe the boundaries of your project. Clearly describing the boundaries is not enough when it comes to project. You need to get the client's agreement as well.

Therefore, the defined scope of the project usually included into the contractual agreements between the client and the service provider. SOW, or in other words, Statement of Work, is one such document.

In the project scope definition, the elements within the scope and out of the scope are well defined in order to clearly understand what will be the area under the project control. Therefore, you should identify more elements in detailed manner and divide them among the scope and out of scope.

### How to Define the Project Scope

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When the project is about to be funded, there should be a set of defined deliveries and objectives for the project. There can be a high level-scope statement prepared at this level.

This high-level scope statement can be taken from the initial documents such as SOW. In addition to the SOW, you need to use any other document or information in order to further define the project scope at this level.

In case, if you feel that you do not have enough information to come up with a high-level scope statement, you should then work closely with the client in order gather necessary information.

Project objectives can be used for defining the project scope. As a matter of fact, there should be one or more deliveries addressing each project objective in the project. By looking at the deliverables, you can actually gauge the project scope.

Once you get to know the main deliverables of the project, start asking questions about the other processes and different aspects of the project.

First identifying and clearly defining the out of scope also helps you to understand the scope of a project. When you go on defining the out of scope, you will automatically get an idea of the real project scope. In order to follow this method, you need to have a defined scope up to a certain level.

Whenever you identify an item for the scope or out-of-scope, make sure you document it then and there. Later, you can revisit these items and elaborate more on those.

Once you have successfully defined the scope of the project, you need to get the sign-off from the related and applicable parties.

Without proper sign-off for the scope, the next phases of the project, i.e., requirements gathering might have issues in executing.

### **Scope Creep**

Scope creep is something common with every project. This refers to the incremental expansion of the project scope. Most of the time, the client may come back to the service provider during the project execution and add more requirements.

Most of such requirements haven't been in the initial requirements. As a result, change requests need to be raised in order to cover the increasing costs of the service provider.

Due to business cope creep, there can be technological scope creep as well. The project team may require new technologies in order to address some of the new requirements in the scope.

In such instances, the service provider may want to work with the client closely and make necessary logistic and financial arrangements.

### **Conclusion**

Project scope definition is the most important factor when it comes to project requirements. It is vital for service providers to define the scope of the project in order to successfully enter into an agreement with the client.

In addition to this, the scope of the project gives an idea to the services provider about the estimated cost of the project. Therefore, service provider's profit margins are wholly dependent on the accuracy of the project scope definition.

## LESSON NINE

# Project Selection Methods

### Introduction

One of the biggest decisions that any organization would have to make is related to the projects they would undertake. Once a proposal has been received, there are numerous factors that need to be considered before an organization decides to take it up.

The most viable option needs to be chosen, keeping in mind the goals and requirements of the organization. How is it then that you decide whether a project is viable? How do you decide if the project at hand is worth approving? This is where project selection methods come in use.

Choosing a project using the right method is therefore of utmost importance. This is what will ultimately define the way the project is to be carried out.

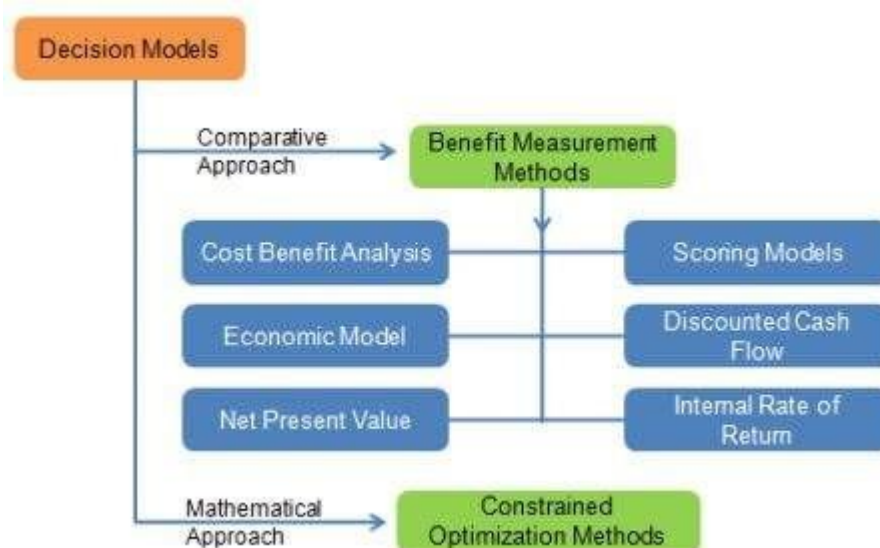
But the question then arises as to how you would go about finding the right methodology for your particular organization. At this instance, you would need careful guidance in the project selection criteria, as a small mistake could be detrimental to your project as a whole, and in the long run, the organization as well.

### Selection Methods

There are various project selection methods practised by the modern business organizations. These methods have different features and characteristics. Therefore, each selection method is best for different organizations.

Although there are many differences between these project selection methods, usually the underlying concepts and principles are the same.

Following is an illustration of two of such methods (Benefit Measurement and Constrained Optimization methods):



As the value of one project would need to be compared against the other projects, you could use the benefit measurement methods. This could include various techniques, of which the following are the most common:

- You and your team could come up with certain criteria that you want your ideal project objectives to meet. You could then give each project scores based on how they rate in each of these criteria and then choose the project with the highest score.
- When it comes to the Discounted Cash flow method, the future value of a project is ascertained by considering the present value and the interest earned on the money. The higher the present value of the project, the better it would be for your organization.
- The rate of return received from the money is what is known as the IRR. Here again, you need to be looking for a high rate of return from the project.

**The mathematical approach** is commonly used for larger projects. The constrained optimization methods require several calculations in order to decide on whether or not a project should be rejected.

**Cost-benefit analysis** is used by several organizations to assist them to make their selections. Going by this method, you would have to consider all the positive aspects of the project which are the benefits and then deduct the negative aspects (or the costs) from the benefits. Based on the results you receive for different projects, you could choose which option would be the most viable and financially rewarding.

These benefits and costs need to be carefully considered and quantified in order to arrive at a proper conclusion. Questions that you may want to consider asking in the selection process are:

- Would this decision help me to increase organizational value in the long run?
- How long will the equipment last for?
- Would I be able to cut down on costs as I go along?

In addition to these methods, you could also consider choosing based on opportunity cost - When choosing any project, you would need to keep in mind the profits that you would make if you decide to go ahead with the project.

Profit optimization is therefore the ultimate goal. You need to consider the difference between the profits of the project you are primarily interested in and the next best alternative.

## Implementation of the Chosen Method

The methods mentioned above can be carried out in various combinations. It is best that you try out different methods, as in this way you would be able to make the best decision for your organization considering a wide range of factors rather than concentrating on just a few. Careful consideration would therefore need to be given to each project.

## Conclusion

In conclusion, you would need to remember that these methods are time-consuming, but are absolutely essential for efficient business planning.

It is always best to have a good plan from the inception, with a list of criteria to be considered and goals to be achieved. This will guide you through the entire selection process and will also ensure that you do make the right choice.



## LESSON TEN

# Project Success Criteria

### Introduction

As a project manager, the main objective of the project manager is to deliver the project within the time stated and on budget defined. However, that's not all when it comes to project success criteria.

In addition to above conditions, the project manager needs to work closely with the customer and should ensure the project deliverables have met the customer expectations.

There are many parameters in a project success criterion.

### Key Performance Indicators

The first project success criterion is to deliver projects bearing in mind the business drivers. Key Performance Indicators (KPI's) is a method used to measure the benefits gained from undertaking the project.

These provide an insight to the scope of the project. The performance indicators are:

- ▣ Established by the clients at the start of the project and are listed on a priority basis.
- ▣ Aligned with the business objectives.
- ▣ Able to make critical decisions based on KPI's for the project.
- ▣ Prove to be a stance for products to be accepted by the clients.
- ▣ It's a quantitative method and it's measurable.

To create a project success, criteria based on KPI is not enough and targets need to be set. These set targets need to be realistic and achievable at the end.

### The Project Manager's Verdict for Project Success Criteria

A project success criterion begins with the initiatives taken by the project manager to the project in question. This will increase the chances of the project becoming successful as well as meeting customer's expectations.

The project manager, who wants his/her project successful will definitely ask the customers for feedback.

This approach will prove to be successful and will be a learning curve if any mistakes had been done. KPI need to go hand in hand with the business objectives for a project to be considered successful.

## Meeting the Customer's Expectations

*Going the extra mile* is not restricted to only customer services, it's also a magic word for project management. A top most important factor for a project success criterion is to exceed customer's expectations by completing the project within the stated deadline, budget and quality.

However, project manager needs to bear in mind that this could be misinterpreted and could lead to unnecessary cost. Ideas to make a better product than sticking to the original idea could be done with the approval of the customer. For this to be successful, proper implementation needs to be in place.

## Success Factors

Success factors are contributions made by the management towards a successful project. These can be classified broadly into five groups as follows:

- ▣ **The project manager** - The person needs to have an array of skills under his arm to use during the project.
- ▣ **Project team** - The team needs to consist of variety of skills and experience. Collectively as a team, success is easy to achieve with proper guidance.
- ▣ **Project** - The scope and timeline of the project is crucial.
- ▣ **Organization** - The organization needs to provide support to both the project manager and the project team.
- ▣ **External environment** - External constraints should not affect the project. Back-up plans need to be in place in case daily tasks cannot be carried by the team.

The project's quality should not be compromised under any circumstances as this will drive away potential customers.

## Further Project Success Criteria

The criteria for a successful project are not restricted to only above. However, following are some of other supporting factors that need to be considered when it comes to a successful project management and execution:

- ▣ Negotiations
- ▣ Proper and conducive project plan
- ▣ Assigning tasks to the team members
- ▣ Developing a plan to achieve common tasks
- ▣ Reviewing and doing a rework when needed
- ▣ Managing project risks efficiently

- Allocating time for process improvement
- Learn from the learning curve
- Proper estimation of project in terms of not only quantitatively but also qualitatively

## Conclusion

A project to be considered successful requires proper planning and the help from the management. Exceeding customer requirements will bring about success to the project.

Understanding the business drivers and ensuring that the project meets the objectives of the business will also contribute to success.

Aligning the key performance indicator to that of the business objective will not only help project managers to keep track but also measure and improve performance.





## LESSON ELEVEN

# Project Time Management

### Introduction

Time is a terrible resource to waste. This is the most valuable resource in a project.

Every delivery that you are supposed to make is time-bound. Therefore, without proper time management, a project can head towards a disaster.

When it comes to project time management, it is not just the time of the project manager, but it is the time management of the project team.

Scheduling is the easiest way of managing project time. In this approach, the activities of the project are estimated and the durations are determined based on the resource utilization for each activity.

In addition to the estimate and resource allocation, cost always plays a vital role in time management. This is due to the fact that schedule over-runs are quite expensive.

### The Steps of the Time Management Process

Following are the main steps in the project time management process. Each addresses a distinct area of time management in a project.

#### 1. Defining Activities

When it comes to a project, there are a few levels for identifying activities. First of all, the high-level requirements are broken down into high-level tasks or deliverables.

Then, based on the task granularity, the high-level tasks/deliverables are broken down into activities and presented in the form of WBS (Work Breakdown Structure).

#### 2. Sequencing Activities

In order to manage the project time, it is critical to identify the activity sequence. The activities identified in the previous step should be sequenced based on the execution order.

When sequencing, the activity interdependencies should be considered.

#### 3. Resource Estimating for Activities

The estimation of amount and the types of resources required for activities is done in this step. Depending on the number of resources allocated for an activity, its duration varies.

Therefore, the project management team should have a clear understanding about the resources allocation in order to accurately manage the project time.

#### 4. Duration and Effort Estimation

This is one of the key steps in the project planning process. Since estimates are all about the time (duration), this step should be completed with a higher accuracy.

For this step, there are many estimation mechanisms in place, so your project should select an appropriate one.

Most of the companies follow either WBS based estimating or Function Points based estimates in this step.

Once the activity estimates are completed, critical path of the project should be identified in order to determine the total project duration. This is one of the key inputs for the project time management.

#### 5. Development of the Schedule

In order to create an accurate schedule, a few parameters from the previous steps are required.

Activity sequence, duration of each activity and the resource requirements/allocation for each activity are the most important factors.

In case if you perform this step manually, you may end up wasting a lot of valuable project planning time. There are many software packages, such as Microsoft Project, that will assist you to develop reliable and accurate project schedule.

As part of the schedule, you will develop a Gantt chart in order to visually monitor the activities and the milestones.

#### 6. Schedule Control

No project in the practical world can be executed without changes to the original schedule. Therefore, it is essential for you to update your project schedule with ongoing changes.

#### Conclusion

Time management is a key responsibility of a project manager. The project manager should equip with a strong skill and sense for time management.

There are a number of time management techniques that have been integrated into the management theories and best practices.

As an example, Agile/Scrum project management style has its own techniques for time management. In addition, if you are keen on learning time management into greater depths, you can always get into a training course of one of the reputed and respected time management trainers.

## LESSON TWELVE

# Stakeholder Management

### Introduction

When working on a project, there are many people or organizations that are dependent on and/or are affected by the final product or output. These people are the stakeholders of a project.

Stakeholder management involves taking into consideration the different interests and values stakeholders have and addressing them during the duration of the project to ensure that all stakeholders are happy at the end.

This branch of management is important because it helps an organization to achieve its strategic objectives by involving both the external and internal environments and by creating a positive relationship with stakeholders through good management of their expectations.

Stakeholder management is also important because it helps identify positive existing relationships with stakeholders. These relationships can be converted to coalitions and partnerships, which go on to build trust and encourage collaboration among the stakeholders.

### How Does Stakeholder Management Work?

Stakeholder management, in a business project sense, works through a strategy. This strategy is created using information gathered through the following processes:

- **Stakeholder Identification** - It is first important to note all the stakeholders involved, whether internal or external. An ideal way to do this is by creating a stakeholder map.
- **Stakeholder Analysis** - Through stakeholder analysis, it is the manager's job to identify a stakeholder's needs, interfaces, expectations, authority and common relationship.
- **Stakeholder Matrix** - During this process, managers position stakeholders using information gathered during the stakeholder analysis process. Stakeholders are positioned according to their level of influence or enrichment they provide to the project.
- **Stakeholder Engagement** - This is one of the most important processes of stakeholder management where all stakeholders engage with the manager to get to know each other and understand each other better, at an executive level.

This communication is important for it gives both the manager and stakeholder a chance to discuss and concur upon expectations and most importantly agree on a common set of Values and Principals, which all stakeholders will stand by.

- **Communicating Information** - Here, expectations of communication are agreed upon and the manner in which communication is managed between the stakeholders is established, that is, how and when communication is received and who receives it.
- **Stakeholder Agreements** - This is the Lexicon of the project or the objectives set forth. All key stakeholders sign this stakeholder agreement, which is a collection of all the agreed decisions.

In today's modern management project practice, managers and stakeholders favor an honest and transparent stakeholder relationship.

### Failures in Stakeholder Management

Some organizations still endure poor stakeholder management practices and this arises because of:

- Communicating with a stakeholder too late. This does not allow for ample revision of stakeholder expectations and hence their views may not be taken into consideration.
- Inviting stakeholders to take part in the decision making process too early. This results in a complicated decision making process.
- Involving the wrong stakeholders in a project. This results in a reduction in the value of their contribution and this leads to external criticism in the end.
- The management does not value the contribution of stakeholders. Their participation is viewed as unimportant and inconsequential.

Whatever way stakeholder management is approached, it should be done attentively so as to achieve the best results.

### Achieving Good Stakeholder Management

Insufficient involvement and ineffective communication with stakeholders can lead to project failure. The following are a few ideas that can be used to achieve good stakeholder management practices:

- Management and stakeholders should work together to draw up a realistic list of goals and objectives. Engaging stakeholders will improve business performance and they take an active interest in the project.
- Communication is the key. It is important for stakeholders and management to communicate throughout the course of the project on a regular basis. This ensures that both parties will be actively engaged and ensure smooth sailing during the course of the project.

- Agreeing on deliverables is important. This makes sure there is no undue disappointment at the end. Prototypes and samples during the course of the project helps stakeholders have a clear understanding regarding the end project.

## Conclusion

In conclusion, in order to achieve an outcome from the projects, good stakeholder management practices are required. Stakeholder management is the effective management of all participants in a project, be it external or internal contributors.

Arguably, the most important element in stakeholder management is communication where a manager has to spend his 99% time in doing meetings, checking and replying e-mails and updating and distributing reports, etc.



## LESSON THIRTEEN

# Statement of Work (SOW)

### Introduction

When it comes to implementing or constructing large and complex systems (such as an enterprise software system), the work requirements and conditions should be properly documented. Statement of Work (SOW) is such document that describes what needs to be done in the agreed contract.

Usually, the SOW is written in a precise and definitive language that is relevant to the field of business. This prevents any misinterpretations of terms and requirements.

An SOW covers the work requirements for a specific project and addresses the performance and design requirements at the same time.

Whenever requirements are detailed or contained within a supplementary document, SOW makes reference to the specific document.

The SOW defines the scope and the working agreements between two parties, typically between a client and a service provider. Therefore, SOW carries a legal gravity as well.

### Purpose of SOW

The main purpose of a SOW is to define the liabilities, responsibilities and work agreements between clients and service providers.

A well-written SOW will define the scope of the engagement and Key Performance Indicators (KPIs) for the engagement.

Therefore, the KPIs can be used to determine whether the service provider has met conditions of the SOW and use it as a baseline for future engagements.

SOW contains all details of non-specifications requirements of the contractor or service provider's effort. Whenever specifications are involved, the references are made from SOW to specific specification documents.

These specification documents can be functional requirements or non-functional requirements.

Functional requirements (in a software system) define how the software should behave functionally and non-functional requirements detail other characteristics of the software such as performance, security, maintainability, configuration management, etc.

## Format of SOW

The SOW formats differ from one industry to another. Regardless of the industry, some key areas of the SOW are common. Following are the commonly addressed areas in a SOW:

### 1. Scope

This section describes the work to be done in a technical manner. If the system to be built is a software system, this section defines the hardware and software requirements along with the exact work to be done in terms of the final system.

If there is anything 'out of scope', those areas are also mentioned under a suitable subheading.

### 2. Location

The location where the work is performed is mentioned under this section. This section also details the hardware and software specifications. In addition to that, a description about human resources and how they work are addressed here.

### 3. Timelines

This defines the timeline allocated for the projects. It includes the development time, warranty time and maintenance time. In addition to calendar time, the man days (total effort) required to complete the project is also noted.

### 4. Delivery schedule

This section of the SOW describes the deliveries and the due dates for the deliveries.

### 5. Standards

The standards (internal or external) are defined in this section. All deliveries and work done should comply with the standards defined in this section of the document.

### 6. Acceptance Criteria

This section defines the minimum requirements for accepting deliverables. It also describes the criteria used for acceptance.

### 7. Mode of contract and payments

There are a number of engagement models when it comes to contracting a service provider.

In the domain of software development, there are two distinct contract models, fixed bid and a retainer.

In fixed bid, the project cost is a constant and it is up to the service provider to optimize the resource allocation in order to maintain the profit margins.

The client does not worry about the number of resources, as long as the delivery schedule is met. In the retainer model, the client pays for the number of resources allocated to the project.

*Since SOW is an integrated part of a project, almost all senior members of the project team should become aware of terms and conditions of the SOW. Sometimes, especially in software development projects, a penalty is applied if the delivery dates are missed. Therefore, everyone should be aware of such demanding terms of a SOW.*

## **Conclusion**

SOW is a critical document for project management. It defines the scope of the work and the work agreements. Therefore, all stakeholders of the project should have a thorough understanding of the SOW of the project and adhere to it.





## LESSON FOURTEEN

# Stress Management Techniques

### Introduction

Whatever kind of job one is involved in, you would always find several factors that lead to severe stress.

It is not uncommon today, with everyone worrying about whether the state of the economy and high employment rates would mean that they are the next to losing their jobs. Like any other management technique, stress management too is very vital for the success of any organization.

If the employees of an organization are unable to work efficiently and be productive, it is the organization that would eventually collapse. It is therefore essential that stress management techniques are understood by all the stakeholders of any organization.

### What Leads to Stress?

It isn't easy to point on just one or two causes of stress. There are several factors that could contribute towards a person suffering from all sorts of stress.

You must understand what causes stress if you are to efficiently try and reduce stress from your lifestyle.

Most often, employees find themselves in a state of confusion as to what their job entails and they may even worry as to whether they might lose their jobs given the current economic situation. This could lead to a lot of stress in the workplace.

Increased pressure from employers could also make an employee work too hard and maybe even work overtime in an attempt to impress the employer or outdo another employee.

There are of course other reasons that could contribute to individual employees suffering from severe stress outside the workplace such as family problems, health-related issues and so on.

Failure to understand and eliminate these elements that cause the stress could eventually lead to dire consequences. These elements are generally known as stressors and are found in plenty in the workplace.

It is not only the employees, who need to identify these stressors, but also the organization itself would need to take relevant steps.

## How to Reduce Stress?

It is of utmost importance that an organization takes this issue seriously. The organization can help reduce stress by:

- Reducing the number of hours for which their employees would have to work per week. This will, in the long run, contribute to a more efficient functioning of the organization, as employees would have more time to rest at home and will come back the next day feeling refreshed.

Working hours should be flexible. This may also include shifts and the rotation of employees.

- A tried and tested technique that many organizations have begun using is the provision of lounges and other recreational facilities to help employees relax during the day should they require some time off.

You may even choose to add refreshments and a TV so that they could forget all the worries of work for a few minutes. Investing in such facilities is a great idea for any organization. You may also allow them to take more holidays throughout the year to ensure that they have a good break.

- Female employees may find that they do not have enough time to spend with their newborn if they have just had a baby.

You should make allowance for such situations. Providing longer maternity leave could help your female employee to come back to work without having too much on her mind with regard to the baby and any postnatal depression.

Another idea would be to provide childcare facilities at the office so that mothers with young children could peep in and ensure their kids are okay every few hours.

- As an employee, you should also make it a point to occasionally have a casual chat with your employees to ensure that they are satisfied with their jobs and have no issues at work.

You should also encourage them and appreciate and praise him/her for tasks carried out very well. This would reduce any worries they may have of the risks of losing their jobs and help them to feel more secure.

## Tips on Coping with Stress

If you are suffering from stress and have identified some of the causes, you should try different techniques to help you cope with the pressure or problems that you face.

Being positive and remaining calm would take you a very long way. Try not to worry about insignificant matters.

If you have any queries or any work-related problems, you should always take it up with your employer and try and get the issue sorted out.

It is important to keep in mind that you should take regular breaks while at work and even after you get home.

You can relieve yourself of most of the stress by taking part in relaxing activities, be it yoga or simply curling up on the couch with a good book and a cup of coffee.

Create a schedule and plan out how you would balance both your work life and family life without letting one overtake the other.

You would find that you are more relaxed this way and would actually look forward to going to work the next day.

Of course, nothing can beat a good night's sleep and a healthy lifestyle and diet.

### **Conclusion**

Although most work-related worries may seem too huge to shake off, once you master the art of coping with stress and are able to get rid of any negative thoughts, you would find that peace would come to you naturally.



## LESSON FIFTEEN

# Structured Brainstorming

### Introduction

This is a systematic process, which encourages participants to actively involve by contributing ideas in a non-critical or non- evaluative environment.

Structured brainstorming sessions are undertaken by organizations to find solution to problems that persists in a work environment. Many successful organizations use structured brainstorming as key tool when it comes to decision making.

### Benefits of Structured Brainstorming

The primary benefit of structured brainstorming is that it's a collaboration of ideas. However, there's a difference between structured brainstorming and unstructured brainstorming.

In structured brainstorming, the participants are given guidelines and rules to follow, so that the input from the sessions is in an orderly manner and constructive.

When it comes to unstructured brainstorming, there are many ideas by participants, but the brainstorming session may not be leading towards any specific goal.

The benefits gained from structured brainstorming are as follows:

- ▣ A collection of ideas from the team members with regards to a particular issue or a problem will prove to be more successful.
- ▣ Opens up a new culture within the organization where team members are free to voice their ideas.
- ▣ It further prevents dominant team members from taking the lead and giving the rest of the team members an unfair chance.
- ▣ Promotes synergy among team members.
- ▣ Helps the team members to come up with ideas to achieve the mission at hand.

### Steps in Structured Brainstorming

Structured brainstorming can prove to be difficult as input comes from various team members. Hence, the following steps can be followed to ensure that constructive results can be obtained at the end.

- ▣ State clearly the objective/theme behind the structured brainstorming. Make sure that each participant is fully aware of what is expected from the brainstorming session. This will save time and energy of the team.

- ▣ Give each team member a chance to demonstrate or voice his/her idea.
- ▣ During structured brainstorming, advise that team members are not allowed to criticize one another's opinion or idea. This promotes freedom of sharing one's idea without hesitation.
- ▣ Repeat the round until the team members do not have any more ideas or solutions.
- ▣ Review the input from each team member and discard any duplicate input.

### **Dos and Don'ts of Structured Brainstorming**

A bad structured brainstorming session will cost your organization money, energy and time if the objective of the brainstorming session is not met. This may cause detrimental factors, which trigger to loss of projects, etc.

Hence, here are some methods for successful brainstorming to be used in your organization.

- ▣ Focus is crucial when it comes to structured brainstorming session. Sharpen the concentration levels of the participants. You can use some exercises at the beginning of the session in order to increase the focus of the participants.
- ▣ Instead of writing down arbitrary rules, positivity with playfulness helps.
- ▣ State the number of ideas.
- ▣ Build and jump.
- ▣ Make the space remember.
- ▣ Stretch mental muscles.
- ▣ Get practical.

Talk and brainstorm about all the possibilities/causes etc., for the problem at hand. Never miss an idea. Have someone recording the brainstorming session.

## Tools for Structured Brainstorming

SWOT Analysis & PEST Analysis are very effective tools for structured brainstorming.

**SWOT analysis** is a useful tool when it comes to decision making. SWOT stands for Strengths, Weakness, Opportunities and Threats. Brainstorming sessions often use SWOT as an analysis tool for reviewing strategies. SWOT analysis is used to assess the following factors:

- ▣ Market capitalization
- ▣ Sales distribution methods
- ▣ A brand or a product
- ▣ A business idea
- ▣ A strategy e.g., entering new markets
- ▣ A department of the organization

**PEST analysis** refers to Political, Economical, Social and Technology. PEST analysis is also often used in brainstorming sessions to understand the market position of an organization. PEST can be used under the following reasons:

- ▣ An organization analyzing its market
- ▣ A product accessing its market
- ▣ Assessing a particular brand in relation to a market
- ▣ A newly venturing business
- ▣ For new strategies based on entering a market
- ▣ For an acquisition
- ▣ For an investment opportunity

## Post-Structured Brainstorming

Once you have completed the brainstorming session, the following needs to be done:

- ▣ Reduce the list of ideas given based on the agreed priority
- ▣ Mix the points, which are similar in nature together
- ▣ Discussion is crucial, merits to be given for each feedback
- ▣ Eradicate ideas that are not relevant to the topic

- Give the team members a chance to jot down ideas if they have any and communicate later

## Conclusion

Structured brainstorming is a technique used to generate ideas, which can help to solve a problem. Structured brainstorming helps to encourage creative thinking and enthusiasm between team members.

It also encourages freewill to accept each other's thoughts.



## LESSON SEVENTEEN

# Succession Planning

### Introduction

Succession planning is one of the most critical functions of an organization. This is the process that identifies the critical and core roles of an organization and identifies and assesses the suitable candidates for the same.

The succession planning process ramps up potential candidates with appropriate skills and experiences in an effort to train them to handle future responsibilities in their respective roles.

Succession planning is applicable for all critical roles in the organization. The upper management of each practice or department is responsible of coming up with a suitable succession plan for each core position under his or her department.

### Steps of Succession Planning

There are four main important steps in planning for succession.



### Step 1: Recruitment and staffing

This is one of the key steps of the succession planning. Hiring the right and skilled employees is the key to growing human resources in the organization. Sometimes, some companies require a paradigm shift in order to retain in the business.

In such cases, the organization requires to let go or redefine the roles and responsibilities of the portion of existing staff. Then, the organization hires the new blood in order to acquire the required skills and expertise.



When it comes to succession planning, organization should always hire people, who will have the potential to go up the corporate ladder.

### Step 2: Training and development

All the organizational training can come under two categories; skills training and management training.

- **Skills training:** Employees are trained to enhance their skills, so their day-to-day work becomes easy.
- **Management training:** A selected set of employees undergoes training where they are trained to take over management responsibilities.

### Step 3: Compensation and performance management

Based on their performance, the employees, who have the potential to become leaders in the organization, should be appropriately compensated.

These employees should be considered for fast track promotions and special compensation benefits.

### Step 4: Talent management

Talent management is one of the key factors that contribute for succession planning. The right candidate will have the required level of skills in order to execute responsibilities of the new role.

The upper management and mentors of the staff member should always make sure that the employee is constantly enhancing his/her skills by accepting challenging responsibilities.

### Typical Activities in Succession Planning

Succession planning has many activities involved. Some of these activities are sequential and others can be performed in parallel to others.

Following are the core activities involved in succession planning.

- Identification of the critical roles for the growth of the company. There are many tools such as Pareto charts in case if you need any assistance in prioritizing the roles.
- Identification of gaps in the succession planning process. In this step, the process of succession planning is analyzed for its strength. If there are weaknesses and gaps, they will be methodologically addressed.
- In this step, the possible candidates for the potential role will be identified. This will be done by analyzing their past performances as well and for some other characteristics such as age.

- ▣ All short-listed employees for potential roles will be then educated about their career path. The employees should understand that they are being trained and their skills are being developed in order to fill critical roles in the organization.
- ▣ When it comes to training and developing people, they should be developed for the positions that exist in the company as well as the positions (roles) that will be introduced in the future.
- ▣ Have a clear understanding of the timeline required for filling key roles. For this, an understanding of when key roles will be vacant is necessary.
- ▣ Conduct regular meetings on the succession plans of the organization.
- ▣ Identify top players of every department and make necessary arrangements to keep them in the company for a long time.
- ▣ Review past succession that took place based on the succession plan and review success. If there are issues, make necessary changes to the succession plan.

## Conclusion

Every organization requires succession planning. By succession planning, organization's key roles are constantly maintained with talented people, so organizations can maintain its strength.

When selecting people for key roles, their adherence to organization's mission and vision is important. This is how visionary leaders are sprung in organizations with commitment for the company's growth.

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## LESSON EIGHTEEN

# Supply Chain Management

### Introduction

In an organization, if a product is manufactured using raw materials from various suppliers and if these products are sold to customers, a supply chain is created.

Depending on the size of the organization and the number of products that are manufactured, a supply chain may be complex or simple.

Supply Chain Management refers to the management of an interconnected network of businesses involved in the ultimate delivery of goods and services to customers.

It entails the storage and transport of raw materials, the process of inventory and the storage and transportation of the final goods from the point of manufacture to the point of consumption.

### Different Links in the Supply Chain

- **Customer** - The start of the supply chain is the customer. The customer decides to purchase a product and in turn contacts the sales department of a company. A sales order is completed with the date of delivery and the quantity of the product requested. It may also include a segment for the production facility depending on whether the product is available in stock or not.
- **Planning** - Once the customer has made his/her sales order, the planning department will create a production plan to produce the product adhering to the needs of the customer. At this stage, the planning department will be aware of raw materials needed.
- **Purchasing** - If raw materials are required, the purchasing department will be notified and they in turn send purchasing orders to the suppliers asking for the deliverance of a specific quantity of raw materials on the required date.
- **Inventory** - Once the raw materials have been delivered, they are checked for quality and accuracy and then stored in a warehouse till they are required by the production department.
- **Production** - Raw materials are moved to the production site, according to the specifics laid out in the production plan. The products required by the customer are now manufactured using the raw materials supplied by the suppliers. The completed products are then tested and moved back to the warehouse depending on the date of delivery required by the customer.

- **Transportation** - When the finished product is moved into storage, the shipping department or the transportation department determines when the product leaves the warehouse to reach the customer on time.

### Levels of Activities in the Supply Chain

In order to make sure that the above supply chain is running smoothly and also to ensure maximum customer satisfaction at the lowest possible cost, organizations adopt supply chain management processes and various technologies to assist in these processes.

There are three levels of activities Supply Chain Management in that different departments of an organization focus on to achieve the smooth running of the supply chain. They are:

- **Strategic** - At this level, senior management is involved in the supply chain process and makes decisions that concern the entire organization. Decisions made at this level include the size and site of the production area, the collaborations with suppliers, and the type of that product that is going to be manufactured and so forth.
- **Tactical** - Tactical level of activity focuses on achieving lowest costs for running the supply chain. Some of the ways this is done is by creating a purchasing plan with a preferred suppliers and working with transportation companies for cost effective transport.
- **Operational** - At the operational level, activity decisions are made on a day-to-day basis and these decisions affect how the product shifts along the supply chain. Some of the decisions taken at this level include taking customer orders and the movement of goods from the warehouse to the point of consumption.

### Technology and Supply Chain Management

In order to maximize benefits from the supply chain management process, organizations need to invest in technology.

For the optimal working of the supply chain management process, organizations mainly invest in Enterprise Resource Planning suites.

Also, the advancement of Internet technologies allows organizations to adopt Web-based software and Internet communications.

### Theories of Supply Chain Management

A number of experts in the field of supply chain management have tried to provide theoretical foundations for some areas of supply chain management by adopting organizational theory.

Some of these theories are:

- Resource-Based View (RBV)

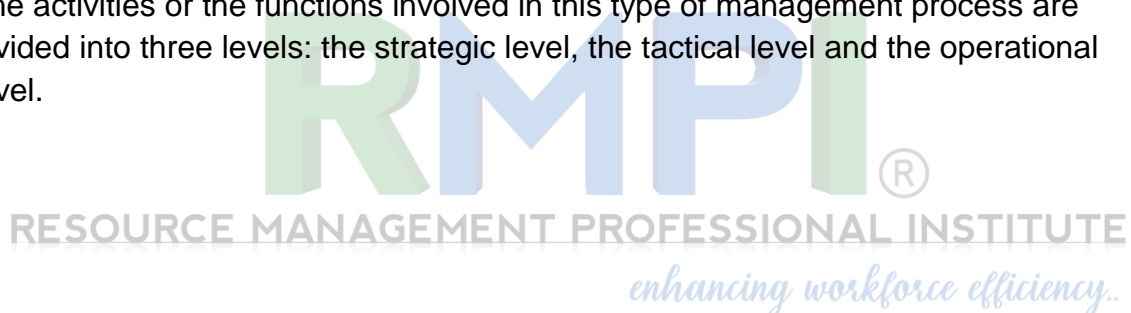
- ▣ Transaction Cost Analysis (TCA)
- ▣ Knowledge-Based View (KBV)
- ▣ Strategic Choice Theory (SCT)
- ▣ Agency Theory (AT)
- ▣ Institutional theory (InT)
- ▣ Systems Theory (ST)
- ▣ Network Perspective (NP)

## Conclusion

Supply Chain Management is a branch of management that involves suppliers, manufacturers, logistic providers, and most importantly, the customers.

The supply chain management process works through the implication of a strategic plan that ensures the desired end product leaving a customer with maximum satisfaction levels at the lowest possible cost.

The activities or the functions involved in this type of management process are divided into three levels: the strategic level, the tactical level and the operational level.



## LESSON NINETEEN

# Team Building Program

### Introduction

Team building programs can be found everywhere nowadays. Almost all the business organizations send their project teams for team building programs every now and then. But what is a team building program?

In team building programs, the entire program focuses on improving the group dynamics of the target team. Therefore, first of all, all the team members of the group should be present for such team building programs.

Usually, team building programs take various faces and there are a lot of activities included in such programs. Each activity is focused on improving one or more aspects of teamwork. Take trust as an example.

Trust towards other team members is one of the most important aspects when it comes to teamwork. In a corporate environment, you may not get an opportunity to get to know the other team members in detail and build trust in them.

Therefore, team building programs address this matter during the teamwork activities and improve the trust between the team members. A good example is the blinded guidance.

In this exercise, one person is blind-folded and the other person is supposed to take the blind-folded person through a rough terrain, just by guiding through voice.

### Benefits for Teamwork

If team building programs are very serious, teamwork should also be a serious matter right? Yes, in order to understand the importance of team building programs, one should first understand the value of teamwork.

Following are the benefits gained through team building programs for teamwork:

- ▣ Improved communication with the rest of the team
- ▣ Ease the conflicts and frustrations in the workplace and especially within the team
- ▣ Enhanced client relationships and conflict resolution
- ▣ High team productivity through understanding
- ▣ Enhanced management and soft skills
- ▣ Enhanced relationships

In addition to the above benefits, there can be many other enhancements to the team culture. If the team was a brand new team assembled for a new project, the team members will develop a good relationship with others. After a team building program, usually a change in the team dynamics can be observed.

Sending a team for team building programs is not just enough. The management should track the progress of such programs and should send the team again for similar experiences when the effect of the first program is reduced overtime.

The work pressure of the workplace and new comers to the team are two of key reasons for reduced effectiveness that occur overtime.

### **Types of Team Building Programs**

There are many types of team building programs in use. Each type is suitable for addressing certain types of team building requirements. As an example, sending middle-aged employees to a program designed for youth will not create a great result.

Following are some of the most common types of team building programs:

- ▣ Corporate conferences
- ▣ Executive team building and guidance programs
- ▣ Outdoor sports
- ▣ Youth programs
- ▣ Religious or charity programs sponsored by the organization
- ▣ Management training programs
- ▣ Residential workshops
- ▣ Adventure programs
- ▣ Game shows
- ▣ White-water rafting

### **Types of Services**

There are two main categories of team building programs; internal and external. Internal team building programs are designed usually by the training and development department of the organization. The events may take place in the workplace or at a location outside of the workplace. In these programs, someone from the organization will conduct the training.

For the next category, an external party is invited to do the team building program. This event may also take place inside the workplace or at an outside location.

When it comes to the effectiveness of the team building programs, usually the programs conducted by outside parties at a remote location are quite successful.

The very feeling of being away from the workplace gives the team a fresh state of mind and they are freer to engage with team building activities.

## Conclusion

For any team, regardless of what they should be collectively achieved, team building is a key strength. In order to get the best out of a team, the team should go through team building programs.

Although most of the companies try to conduct indoor programs for this purpose, they deliver less effective results compared to team building events done by 3rd party professionals at remote locations.





## LESSON TWENTY

# Team Motivation

Motivation plays an impeccably valuable role in any organization. It is a trait that should be instilled in every employee of an organization, despite their designation or responsibilities. Having stated that, it is imperative that senior management looks at ways of increasing team motivation within an organization.

Team structures may vary depending on the function in an organization that is assigned to a group of people to the mere fact of a group of people belonging to an organization.

Whatever the nature of the team formation is, it is important that such groups of people falling into one or more teams act in harmony and in line with an organization's ultimate goals.

### Two Main Approaches for Team Motivation

#### 1. Negative Team Motivation

On the outset you may feel that some managers really enjoy belittling employees and shouting at them all the time.

Such approach to motivation is guided by the fear factor principal and is a very primary approach; one that we know from our childhood. Therefore, the effects of such negative motivational techniques will surely be effective in short term as against the desired result of long term.

Some managers also tend to set unrealistic goals before their teams in hopes of getting team members to work harder and more effectively.

However, as this delusion takes its stance, employees will become understanding of the unrealistic nature of the goals and also will feel demotivated at the same time due to the lack of achievement orientation.

#### 2. Positive Team Motivation

Since the primary approach of negative motivation techniques have not brought about effective results, more and more managers have now turned to positive motivational techniques.

Guiding a team's motivation based on positive reinforcement involves a few steps:

- You will need to understand individual strengths and weaknesses and how these strengths and weaknesses affect the person and his/her team when operating within a team.

- ▣ Building self-esteem of both the team and individuals.
- ▣ Assigning value to each team member (e.g., seeking their opinion, sharing information and allowing their contribution to play a role in team decisions).

## Dynamics of Team Motivation

### 1. Don't allow assumptions to rule

So you may evaluate an individual's strengths and weaknesses and may falsely conclude that this person will not function effectively within a team due to his/her personal traits.

But unless otherwise you put this person in a team environment and observe the team dynamics, you wouldn't definitely know the outcome. Therefore, the rule of the thumb for any manager is not to isolate their team members due to assumptions that you may hold.

### 2. Know that people are different

Secondly, it should be noted that people differ from one another. Therefore, when it comes to team motivation, the managers will need to do certain things to balance out negative effects.

You will be dealing with different personalities therefore, although there are set of rules by which a team operates, your diplomacy and flexibility in operation too will contribute to successful team motivation to be retained.

### 3. Don't isolate the black sheep

The third factor is not to isolate black sheep. Any family or any organization will have black sheep. These are radical individuals, who seek extra attention.

Therefore, rather than isolating these characters, you will need to be skillful enough to reassure a sense of belonging to such individuals. The truth of the matter is that once such individuals feel secured and important, they will become very loyal to his clan.

### 4. Understand the psychology behind things

A little bit of psychology goes a long way in motivating teams. You do not need to have studied psychology formally to understand the basic concepts.

However, it would come in handy if you have read about a couple of motivational theories and motivational factors that contribute to human dynamics. When you know underlying factors of a certain concept, you will be better able to address the issue.

## 5. Lead by example

If you are mentoring a team and if you are trying to build team spirit among the individuals, but if you are not a good spirited individual yourself, it will become extremely difficult for you to get your team to achieve a sense of identity as a team.

So a team should always have someone leading by example in order to become motivated sufficiently.

## 6. Work and fun equilibrium

And lastly but not in the very least, try to strike a balance between work and fun. Every team needs to engage in work and non-work related activities to build up their spirit.

Therefore, make sure that your team received plenty of opportunities to mingle with one another and share a good laughter. Little things go a long way in human dynamics and such spirits built over a cup of coffee will take your organization a long way at the end of the day.



## LESSON TWENTY-ONE

# The Balanced Scorecard

### Introduction

The balance scorecard is used as a strategic planning and a management technique. This is widely used in many organizations, regardless of their scale, to align the organization's performance to its vision and objectives.

The scorecard is also used as a tool, which improves the communication and feedback process between the employees and management and to monitor performance of the organizational objectives.

As the name depicts, the balanced scorecard concept was developed not only to evaluate the financial performance of a business organization, but also to address customer concerns, business process optimization, and enhancement of learning tools and mechanisms.

### The Basics of Balanced Scorecard

Following is the simplest illustration of the concept of balanced scorecard. The four boxes represent the main areas of consideration under balanced scorecard. All four main areas of consideration are bound by the business organization's vision and strategy.



The balanced scorecard is divided into four main areas and a successful organization is one that finds the right balance between these areas.

Each area (perspective) represents a different aspect of the business organization in order to operate at optimal capacity.

- **Financial Perspective** - This consists of costs or measurement involved, in terms of rate of return on capital (ROI) employed and operating income of the organization.

- ▣ **Customer Perspective** - Measures the level of customer satisfaction, customer retention and market share held by the organization.
- ▣ **Business Process Perspective** - This consists of measures such as cost and quality related to the business processes.
- ▣ **Learning and Growth Perspective** - Consists of measures such as employee satisfaction, employee retention and knowledge management.

The four perspectives are interrelated. Therefore, they do not function independently. In real-world situations, organizations need one or more perspectives combined together to achieve its business objectives.

For example, Customer Perspective is needed to determine the Financial Perspective, which in turn can be used to improve the Learning and Growth Perspective.

### Features of Balanced Scorecard

From the above diagram, you will see that there are four perspectives on a balanced scorecard. Each of these four perspectives should be considered with respect to the following factors.

When it comes to defining and assessing the four perspectives, following factors are used:

- ▣ **Objectives** - This reflects the organization's objectives such as profitability or market share.
- ▣ **Measures** - Based on the objectives, measures will be put in place to gauge the progress of achieving objectives.
- ▣ **Targets** - This could be department based or overall as a company. There will be specific targets that have been set to achieve the measures.
- ▣ **Initiatives** - These could be classified as actions that are taken to meet the objectives.

### A Tool of Strategic Management

The objective of the balanced scorecard was to create a system, which could measure the performance of an organization and to improve any back lags that occur.

The popularity of the balanced scorecard increased over time due to its logical process and methods. Hence, it became a management strategy, which could be used across various functions within an organization.

The balanced scorecard helped the management to understand its objectives and roles in the bigger picture. It also helps management team to measure the performance in terms of quantity.

The balanced scorecard also plays a vital role when it comes to communication of strategic objectives.

One of the main reasons for many organizations to be unsuccessful is that they fail to understand and adhere to the objectives that have been set for the organization.

The balanced scorecard provides a solution for this by breaking down objectives and making it easier for management and employees to understand.

Planning, setting targets and aligning strategy are two of the key areas where the balanced scorecard can contribute. Targets are set out for each of the four perspectives in terms of long-term objectives.

However, these targets are mostly achievable even in the short run. Measures are taken in align with achieving the targets. Strategic feedback and learning is the next area, where the balanced scorecard plays a role. In strategic feedback and learning, the management gets up-to-date reviews regarding the success of the plan and the performance of the strategy.

### **The Need for a Balanced Scorecard**

Following are some of the points that describe the need for implementing a balanced scorecard:

- ▣ Increases the focus on the business strategy and its outcomes.
- ▣ Leads to improvised organizational performance through measurements.
- ▣ Align the workforce to meet the organization's strategy on a day-to-day basis.
- ▣ Targeting the key determinants or drivers of future performance.
- ▣ Improves the level of communication in relation to the organization's strategy and vision.
- ▣ Helps to prioritize projects according to the timeframe and other priority factors.

### **Conclusion**

As the name denotes, balanced scorecard creates a right balance between the components of organization's objectives and vision. It's a mechanism that helps the management to track down the performance of the organization and can be used as a management strategy. It provides an extensive overview of a company's objectives rather than limiting itself only to financial values. This creates a strong brand name amongst its existing and potential customers and a reputation amongst the organization's workforce.

## LESSON TWENTY-TWO

# The Virtual Team

### Introduction

A virtual team is a team where the primary method of interaction is done through electronic mediums. When it comes to the medium, it could range from e-mail communications to video conferencing.

Some virtual teams do not interact face-to-face (when team members reside in different demographics) and some virtual teams physically meet up occasionally.

Think of an online business for web development. Someone can start such a business and hire developers, QA engineers, UI engineers and project managers from different parts of the globe.

Since web development does not involve in physical delivery of goods and all the deliveries are done electronically, such a company can exist on the Internet.

Team meetings can be held through conference voice calls or video calls. This virtual team can work towards their company goals and act as a single entity just by telecommuting.

### Why Virtual Teams?

There are many reasons for having a virtual team. First of all, it is the technology. The Internet and related technologies helped enhancing the communication across the globe, where certain industries that do not require the person to be present in physical sense could make much use of it. A good example is a web development team.

Following are some of the top reasons for having virtual teams:

- ▣ Team members are not located in the same demography.
- ▣ The transportation cost and time is quite an overhead.
- ▣ Team members may work in different times.
- ▣ The company does not require a physical office, so the logistics and related costs are minimum.
- ▣ The type of work done may require high level of creativity, so the employees will have better creativity when they work from a place they are comfortable with (home).

## Types of Virtual Teams

There are many types of virtual teams operating at present. Following are a few of those teams:

- ▣ Entire companies that operate virtually
- ▣ Tasks teams, responsible of carrying out a specific task
- ▣ Friendship teams such as groups in Facebook or any other social network
- ▣ Command teams, such as a sales team of a company distributed throughout the US
- ▣ Interest teams where the members share a common interest

## The Technology

The technology plays a vital role for virtual teams. Without the use of advanced technology, virtual teams cannot be effective.

The Internet is the primary technology used by the virtual teams. The Internet offers many facilities for the virtual teams. Some of them are:

- ▣ E-mail
- ▣ VoIP (Voice Over IP) - voice conferencing
- ▣ Video conferencing
- ▣ Groupware software programs such as Google Docs where teams can work collaboratively.
- ▣ Software for conducting demonstrations and trainings such as Microsoft Live Meeting and WebEx.

When it comes to the technology, not only the software matters, the virtual teams should be equipped with necessary hardware as well.

As an example, for a video conference, the team members should be equipped with a web camera and a microphone.

## Advantages and Disadvantages

First of all, let's look at the advantages of operating as a virtual team.

- ▣ Team members can work from anywhere and anytime of the day. They can choose the place they work based on the mood and the comfort.



- ▣ You can recruit people for their skills and suitability to the job. The location does not matter.
- ▣ There is no time and money wasted for commuting and clothing.
- ▣ Physical handicaps are not an issue.
- ▣ The company does not have to have a physical office maintained. This reduces a lot of costs to the company. By saving this money, the company can better compensate the employees.

Along with the above-mentioned advantages, following are few disadvantages of using virtual team:

- ▣ Since team members do not frequently meet or do not meet at all, the teamwork spirit may not be present.
- ▣ Some people prefer to be in a physical office when working. These people will be less productive in virtual environments.
- ▣ To work for virtual teams, individuals need to have a lot of self-discipline. If the individual is not disciplined, he or she may be less productive.

## Conclusion

Virtual teams are rising in numbers nowadays. Small technology companies are now adapting virtual team practice for recruiting the best people from all over the globe.

In addition, these companies minimize their operating costs and maximize the profit margins. Additionally, the employees working in virtual teams are at advantages when it comes to working in their own home, own time, and reduction of commuting costs.

Therefore, organizations should look into setting up virtual teams for different tasks whenever possible.

## LESSON TWENTY-THREE

# Work Breakdown Structure

### Introduction

Dividing complex projects to simpler and manageable tasks is the process identified as Work Breakdown Structure (WBS).

Usually, the project managers use this method for simplifying the project execution. In WBS, much larger tasks are broken down to manageable chunks of work. These chunks can be easily supervised and estimated.

WBS is not restricted to a specific field when it comes to application. This methodology can be used for any type of project management.

Following are a few reasons for creating a WBS in a project:

- ▣ Accurate and readable project organization.
- ▣ Accurate assignment of responsibilities to the project team.
- ▣ Indicates the project milestones and control points.
- ▣ Helps to estimate the cost, time and risk.
- ▣ Illustrate the project scope, so the stakeholders can have a better understanding of the same.

### Construction of a WBS

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Identifying the main deliverables of a project is the starting point for deriving a work breakdown structure.

This important step is usually done by the project managers and the subject matter experts (SMEs) involved in the project. Once this step is completed, the subject matter experts start breaking down the high-level tasks into smaller chunks of work.

In the process of breaking down the tasks, one can break them down into different levels of detail. One can detail a high-level task into ten sub-tasks while another can detail the same high-level task into 20 sub-tasks.

Therefore, there is no hard and fast rule on how you should breakdown a task in WBS. Rather, the level of breakdown is a matter of the project type and the management style followed for the project.

In general, there are a few "rules" used for determining the smallest task chunk. In "two weeks" rule, nothing is broken down smaller than two weeks' worth of work.

This means, the smallest task of the WBS is at least two-week long. 8/80 is another rule used when creating a WBS. This rule implies that no task should be smaller than 8 hours of work and should not be larger than 80 hours of work.

One can use many forms to display their WBS. Some use tree structure to illustrate the WBS, while others use lists and tables. Outlining is one of the easiest ways of representing a WBS.

Following example is an outlined WBS:



There are many design goals for WBS. Some important goals are as follows:

- ▣ Giving visibility to important work efforts.
- ▣ Giving visibility to risky work efforts.
- ▣ Illustrate the correlation between the activities and deliverables.
- ▣ Show clear ownership by task leaders.

### WBS Diagram

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In a WBS diagram, the project scope is graphically expressed. Usually the diagram starts with a graphic object or a box at the top, which represents the entire project. Then, there are sub- components under the box.

These boxes represent the deliverables of the project. Under each deliverable, there are sub-elements listed. These sub- elements are the activities that should be performed in order to achieve the deliverables.

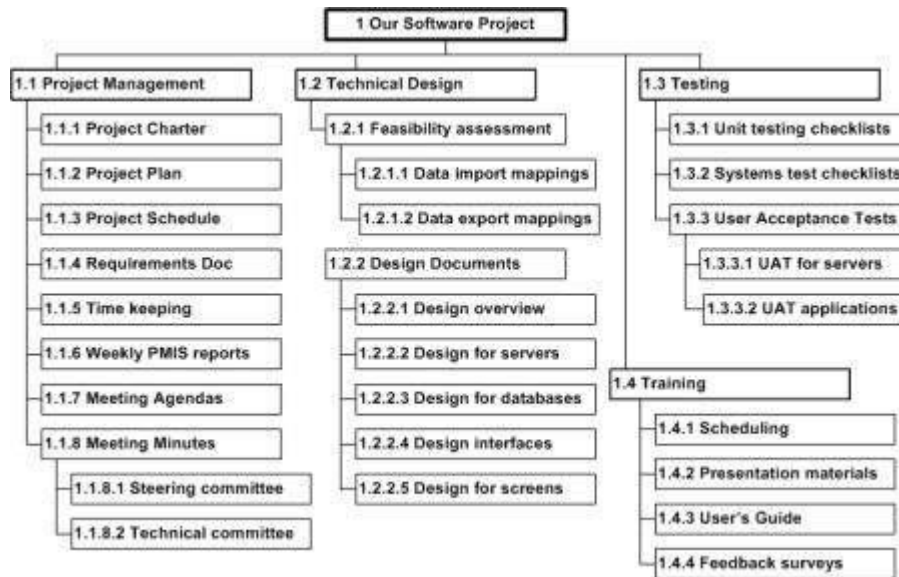
Although most of the WBS diagrams are designed based on the deliveries, some WBS are created based on the project phases. Usually, information technology projects are perfectly fit into WBS model.

Therefore, almost all information technology projects make use of WBS.

In addition to the general use of WBS, there is specific objective for deriving a WBS as well. WBS is the input for Gantt charts, a tool that is used for project management purpose.

Gantt chart is used for tracking the progression of the tasks derived by WBS.

Following is a sample WBS diagram:



## Conclusion

The efficiency of a work breakdown structure can determine the success of a project.

The WBS provides the foundation for all project management work, including, planning, cost and effort estimation, resource allocation, and scheduling.

Therefore, one should take creating WBS as a critical step in the process of project management.