

Project management assignment

[Engineering](#), [Project Management](#)



Project constraints delay the start of project activities. Three project constraint need to be considered in scheduling. 1. Technological or Logical Constraints: These constraints show the sequence in which project activities must occur. A project network framing a house might have three activities i.e (1) pour foundation, (2) build frame, (3) cover roof. All of these three activities are in sequence because each activity depends on the previous one. We can say that we cannot perform activity 2 until activity 1 is completed. 2. Physical Constraints: Physical constraints are in rare situations that cause activities that would normally occur in parallel to be constrained by environmental conditions. For example, renovation of a hip compartment might allow only one person to perform an activity because of space limitations, the procedures for handling physical constraints are similar to those used for resource constraints. 3. Resource Constraints: A project network planner may assume adequate resources and show activities occurring in parallel because parallel activities hold potential for resource conflict.

For example, you are planning a wedding reception that includes four activities which are 1) Plan 2) Hire band 3) Decorate hall and 4) Purchase refreshments. Each activity takes one day. Activities 2, 3 and 4 could be done in parallel by different people. These activities are not technically dependent on each other. If one person performs all these activities, the resource constraint requires the activities to be performed in sequence. So the consequence is delay and the very difficult set of network is shown. Resource dependency takes priority over technical dependency, but does not violate the technical dependency.

That is hiring band, decoration and purchase of refreshments are in sequence rather than concurrently but they must be completed before arrival of the guests. Even in the small projects in interrelationship and interactions among time and resource constraints are complex. Before starting a project manager must do some efforts to examine these interactions which surprisingly uncover the problems. If a project manager do not consider a resource availability in moderate or complex project usually faces a big problem in the mid of the project and it is too late to take correct actions.

The deficit of resource can significantly increase in project cost, completion date etc. The project manager must be careful about scheduling resources to ensure availability in the right quantities and at the right time. These are computer software programs that can identify resource problems during the early project planning phase when corrective actions can be considered. These programs require activity resource need and availability information to schedule resource. Kinds of Resource Constraints: Four kinds of resource constraints are discussed here which are; People, Materials, Equipment and Working Capital . People: People are the most important resource of project. For doing any task people are the major resource which is required and is classified by the skills they have got. For example some have skills of programming which are called programmers. Similarly there are mechanical engineer, welders, inspector, marketing director etc. For successful completion of project different people are hired for different projects. 2. Materials: These are the materials which are required for project or which are to be used in a project.

For example chemicals are the materials which are required for scientific project. When doing a road project, concrete are the required materials which are being used. Similarly survey data is needed for marketing project. Projects delay when there is shortage of materials. So for successful completion of project, material should be scheduled and to be included in the project plan. 3. Equipment: These are resources which are represented by size; Quantity type etc. to complete any project, the equipment constraint should be minimized.

For instance in multi environment projects, the same equipments can be used to work on another project, but working on multi environment it should be considered that the pending projects are not delayed. For example if there is a pending project which is to be completed in the remaining next 5 months and for this 2 tractors are needed and the company has got 4 at the same time, so it is common that the project will not delay, however if the project requires 4 tractors and the company has got 2, so it might delay the pending project. So equipment constraints should be minimized when starting any project. . Working Capital: Working capital acts as a major resource in some projects situations, typically in construction projects. If the working capital is available and ready whenever it is required, it helps the project manager to assign and work on many activities at the same time. However if the working capital is not readily available it acts as a constraint for project managers. CLASSIFICATION OF A SCHEDULING PROBLEM Today most of the scheduling method requires the project manager to classify the project as either time constraint or resource constraint.

One of the simplest tests to determine if the project is time or resource constraint is to ask “ if the critical path is delayed, will resource be added to get back on schedule? ” If the answer is yes then the project is time constrained and the project will be resource constrained if the answer is no.

Time Constrained Projects: Time constrained projects must be completed within a specified period of time or an imposed date. Resource can be added to ensure the project completed by a specific date. Although time is a critical factor but resource usage should be no more than is sufficient and necessary.

Resource Constrained Projects: Resource constrained projects assume the level of resource available cannot be exceeded. If the resources are inadequate, the project will acceptable to delay but as little a possible. In the terms of scheduling time constrained means project duration is fixed and resources are flexible, while resource constraint mean resources are fixed and time is flexible. **SPLITTING / MULTITASKING** Splitting or multitasking is a scheduling technique which is used to get a better project schedule or to increase the utilization resource.

A planner splits the work which is involved in an activity by interrupting the work and sending the resource of an activity to another activity for some time until the resources resume the work of the first activity. Splitting can be useful if the work involved in an activity does not include large tart up or shutdown cots. For example if you move the equipments from one activity location to another activity location, but the most common error is to

interrupt the working of the people where there is high conceptual start up and shutdown costs.

For example a bridge designer take time off to work on the problem design of another project may result or cause this individual to lose four days in and out of two activities. Some people argued that the shortage of resource in the multitasking is the major reason of the failure of the project. We also agree from that, so the planners should avoid splitting or multitasking as much as possible except in the case where there is not alternative for resolving the resource problem. BENEFITS OF SCHEDULING REOURCES

It's important to remember that if there are limited resource and the time estimate are accurate; the resource constrained schedule will come into existence as the project is implemented. Therefore the failure of project due to limited resource can lead to a serious problem for a project manager. The benefit of creating the schedule before the project helps to leave out the time for considering alternatives. If the schedule delay is unacceptable for some reason, so the assumption for being resource constrained can be reassessed.

Resource schedule give us the information which is needed in the preparation of time phased work package budget. If the resource schedule established once, it provides quick mean for a project manager to measure the impact of unforeseen events such as equipment breakdown, transfer of project personnel etc. Resource schedule also allow the project manager to asses how much flexibility they have over certain resource. This is useful

when the other managers request to borrow or share resource. MULTI PROJECT RESOURCE SCHEDULE:

The resource allocation generally occurs in a multi projects where the demand of one project adjusts with the need of other projects. Organizations must develop and manage such systems which efficiently allocating and scheduling resource across several projects which have different priorities, resource requirements and risks. The system must be dynamic and capable that once the project is completed, it accommodated easily. The following is the list of more common problems which encountered in managing multi project resource schedule. 1. Overall schedule slippage:

Because the projects often share resources, the delay in one project can have ripple effect and delay in other projects, for example the work on one software development can be failed because the coders schedule for the next critical task are late in completing their work for another project. 2. Inefficient resource utilization: Because projects have different schedules, the demand may be greater or less in overall resource. For example, in a firm having a staff of 10 electricians to meet when demand is high and under normal conditions only 5 electricians are required. . Resource bottlenecks: Delays and schedules are extended as a result of shortage of critical resource. That is required by multiple projects. Likewise, several projects at a U. S forest area were extended because there was only one silviculturist on the staff. In order to deal with thee problem, many companies create project offices to oversee the scheduling of resources across multiple projects. One

approach is that to use a first come first served rule in resource scheduling. New project schedule are based on the availability of resources.

One disadvantage of this approach is that it does not optimally utilize resources or take into account the priority of the project. Many companies are using outsourcing as a means for dealing with their resource allocation problems. In some case the company can reduce the number of projects by managing only core projects and outsource non critical project to contractors and consulting firms. Companies may hire temporary workers which help in certain activities that are failing behind schedule when there are insufficient internal resources to meet the demand of the all projects.

THE FIVE STAGE TEAM DEVELOPMENT MODEL Just as newly born children develop in a certain manner in the first few months, many experts argue that group is also developed in the same manner. One of the mot popular and mostly used model consist of five stages through which different group's turns into effective and efficient teams. 1. Forming: It is the initial stage of five stage team development model. In this stage the members gets known to each other and they interact with each other and understand the cope of the project.

They establish fundamental rules by finding out what behaviors and attitude are acceptable with respect to the project and who is responsible for what activity in the project. Once member think themselves as a part of the project team this stage is completed. 2. Storming: This stage involves a high level of internal conflicts. Members accept and view themselves as a part of the project group but they resist to the limitations and restrictions that are

put by the project and project group on them that they cannot perform individually of project group.

As conflicts at this stage are resolved the group moves forward to the next stage. 3. Norming: In this stage close relationships are developed and the group shows interaction. Feelings of friendship and sharing of responsibility are raised to high level. When the structure of group becomes solid and they establish a common set of goals and how they should work together, this phase ends. 4. Performing: In this phase the group's focus moves from knowing each other to accomplishing project goals. The team operating structure at this time is fully practical. . Adjourning: During this stage the team is disbanded, the focus is to finish the project rather than high performance. Member's response varies from each other at this stage. Some members are excited and they enjoy the accomplishment of the project team others may be depressed to lose friendship made during this period. Implications of five stage development model to the project manager: 1) The project manager needs to give initial attention to help the project team to develop quickly to the performing stage. 2) The project manager has found that sharing a model with members is useful because it helps them to accept the attention and conflicts in the second stage (storming) and it shows them a part to move to the next stages. 3) It emphasizes on the importance of the norming stage which contributes to the level of productivity in performing stage. BUILDING HIGH PERFORMANCE PROJECT TEAMS In building a high performance project team, a project manager plays a very vital role by performing the following activities Recruiting Project members:

Different organizations have different way to select and recruit project members. Two factors effecting the recruitment process i-e importance of project and kind of structure being used to complete the project. In high priority projects which are important for the future success of the organization, the project managers are often given to select any worker whom the project manager considers him necessary. For les important project the project manager will have to attract workers from other departments within the organization to join the team, while selecting and recruiting the team members.

There are also some less important considerations it should be taken into account. a) Problem solving ability, b) availability, c) technological expertise, d) credibility, e) Political connections, f) ambition in initiative and energy

Conducting project meetings: A first project team meeting must be arranged so that the project manager can achieve three objectives. 1. Overview of project, scope, objectives and procedure 2. Personal background of other members and who is responsible for what in project. 3. How the team should to interact to work on the project.

Establishing Ground rules: During the first meeting the project manager must establish basic rules that how members will interact with each other while working on project and organizational procedures. (1) Planning decisions, (2) Tracking decisions, (3) managing change decisions, (4) Relationship decisions, (5) managing subsequent project meetings. Establishing a Team identity: One of the biggest challenges for project managers in building a

team is the team members cannot give full time to the project. Professionals work on different phases of the project.

They are often members of other departments, each competing for their time. Creating a Shared Vision: A shared vision unites professionals with different backgrounds to a common goal. It motivates members to subordinate their individual goals and do what is best for the project. Finally a shared vision for a project emphasizes commitment to the long term and discourages expedient responses that collectively dilute the quality of the project. First, its essential qualities must be able to be communicated. Second, vision has to be challenging but also realistic.

Third, the project manager has to believe in the vision. Requirement of an effective project vision, 1) Communicate 2) Strategic Sense 3) Passion 4) Inspires others Managing Project Reward System: Project managers are responsible for managing the reward system that encourages team performance and extra effort. While project managers tend to focus on group reward, there are times when they need to reward individual performance. This is done by only to compensate extraordinary effort but also to signal to the other what exemplary behavior is.

Among the rewards they use to motivate and recognize individual contribution are the following 1) letters of commendation 2) Public recognition for outstanding work. 3) Job assignments. 4) Flexibility Managing Conflicts within the Project Team: Conflicts always take place during the life span of a project. Members disagree over priorities, resource allocation, solutions to different problems etc. Some conflicts even support the goals of

the group and can enhance their performance. a) Encouraging functional conflicts: Functional conflicts are when two professional's doesn't like each other and the way they work.

It is not a pleasant situation but it is productive for the project because of high competition. b) Managing dysfunctional conflict: Dysfunctional conflict is hard to identify. It occurs when technical disagreement changes into personality conflicts which cause delay in critical projects. Some strategies to manage dysfunctional conflicts are: i) Mediate the conflict ii) Arbitrate the conflict iii) Control the conflict iv) Accept it v) Eliminate

MANAGING VIRTUAL PROJECT TEAMS

Developing an effective project team and selecting the right people for the team is not an easy job. It would be more challenging if we build a team whose members cannot interact face to face. In virtual project team, the team members are geographically scattered and seldom meet face to face. When team members are scattered so the chance for direct communication is very less. In this case the electronic communication plays a vital role such as internet, email and teleconferencing. Managing virtual project teams involve two biggest challenges. 1. Developing trust 2.

Effective pattern of communication A manager can facilitate trust with virtual project team by: (1) Arranging the exchange of social information that everyone is and their personal background information (2) Roles should be set for each team member and specific task should be assigned to them so that they can contribute their part to the project. Trust in virtual project team grows through (a) Reliability (b) Consistency (c) Responsiveness (3) Project

manager must constantly show spirit, ambition and motivation in all messages, this spirit will spread through out the virtual project.

Another major challenge to manage a VPT is to develop communication patterns which are effective. Emails and faxes are effective for communication information but they cannot show the feelings of the team member. Videoconferencing is a great technology and is a great improvement over non visual communication patterns but interaction can only be done on advanced and expensive systems. Even with best systems managers have to solve other problems such as time zone difference, cultural differences and finding such a time when all team members are free so they can interact.

Some of the tips to enhance VPT performance and reduce communication problems are: (1) Include face to face time if all possible: An initial face to face meeting must be arranged for all team members so they can meet each other, interact with each other, know about the team member's personal backgrounds and what roles and activities they are performing in the project. (2) Keep the team members informed on how the overall project is going: Shareware or other central access point such a website or LAN should be used to keep the team members informed about how the project is going and the project schedule. 3) Don't let the team members vanish: A main problem faced by VP team members is interactions with each other.

Interaction problem occurs due to difference in time zones and may be a team member may not be free when other team member is free. So an internet scheduling software should be used. (4) Establish a code of conduct

to avoid delays: Team members should not only agree on how, when and what information to share but they should also agree when and how they will respond to the information.

A priority system should be developed to identify which information needs quick response from those which have longer time frame. (5) Establishing clear norms and protocols for surfacing assumptions and conflicts: Most of the communication in VPT is non visual so the project manager cannot see the body language and facial expressions of team members to sense the actual situation. They need to focus more deeply while communicating to force members to explain their actions their point of views and their involvement more clearly. PROJECT TEAM PITFALLS

High performance project team can produce above the expectation but there is also a dark side of project team that is projectitis. Project team pitfalls discusses the problem that high performance project teams can give up to and also discusses what project managers can do to reduce chance or probability of these problems. 1) Groupthink: This idea was first identified by Janis. According to him this term refers to the tendency that members in a highly integrated and connected group lose their assessment (evaluation), competencies and skills which are required in critical situation.

This results in quick decision giving little attention or force to alternatives. Some of the features of group link are. 1. Illusion of invulnerability 2. White wash of critical thinking 3. Negative stereotypes of outsiders 2) Bureaucratic Bypass Syndrome: Project teams are often given authority to do things without following the culture, etiquettes and agreements of the organization.

A team that operate outside other workers who are limited by the norms, culture and rules of the organization. So these managers or workers will find ways to oppose and frustrate the project team.) Team spirit becomes Team infatuation: High performance project teams can turn out to be an excellent source of personal satisfaction. Some authors like Geavitt and Lipman blue even say that team member's acts like lovers. They fall in love with the challenge of the project and talent and skills around them. This involvement and interest with the project and project team results in greater contribution to the success of the project 4) Going native: This phrase was used by British foreign services during exploring times.

This phrase was used for agents who were given the assignment to explore different cities and countries but they accepted the norms, values and customs of the countries to which they were sent. The same thing can occur in project team when they become closely identified to their customer. So the customer's interest takes priority over the organization interest. To manage these conditions. 1. Awareness in the mind of project team members to prevent such situations. 2. Taking anticipated action to reduce chances of these problems.