

Course Name : PROJECT MANAGEMENT Course Code : 308

Unit 1: Introduction to Project Management

Objectives

After studying this unit, you will be able to:

- Know Project Manager and his responsibilities
- Understand Selection of a Project Manager
- Know about the phases of Project Management
- Describe Evolution of Sales Department

Introduction

A project is a group of unique, interrelated activities that are planned and executed in a certain sequence to create a unique product or service, within a specific time frame, budget and the client's specifications. Some of the characteristics of the tasks that qualify to be a project are: uniqueness, specificity of goal, sequence of activities, specified time and interrelatedness. Projects are carried out under many resource constraints and their success depends on the ability of the manager to manage these constraints effectively. Project management is the application of the knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations.

Every project has a set of activities that are unique, which means it is the first time that an organization handles that type of activity. These activities do not repeat in the project under similar circumstances i.e., there will be something different in every activity or even if the activity is repeated, the variables influencing it change every time.

Definition of Project Management

Project management is the discipline of organizing and managing resources in such a way that these resources deliver all the work required to complete a project within defined scope, time, and cost constraints. A project is a temporary and one time endeavor undertaken to create a unique product or service. This property of being a temporary and one time undertaking contrasts with processes, or operations, which are permanent or semi-permanent ongoing functional work to create the same product or service over-and-over again. The management of these two systems is often very different and requires varying

technical skills and philosophy, hence requiring the development of project management first challenge of project management is ensuring that a project is delivered within the defined constraints. The second, more ambitious, challenge is the optimized allocation and integration of the inputs needed to meet those predefined objectives. The project, therefore, is a carefully selected set of activities chosen to use resources to meet the predefined objectives.

As a discipline, Project Management developed from several different fields of application, including construction, mechanical engineering, military projects, etc. In the United States, the forefather of project management is Henry Gantt, called the father of planning and control techniques, who is famously known for his use of the “bar” chart as a project management tool, for being an associate of Frederick Winslow Taylor’s theories of scientific management, and for his study of the work and management of Navy ship building. His work is the forerunner to many modern project management tools, including the work breakdown structure and resource allocation. The 1950’s mark the beginning of the modern project management era. Again, in the United States, prior to the 1950s, projects were managed on an ad hoc basis using mostly Gantt Charts, and informal techniques and tools. At that time, two mathematical project scheduling models were developed:

1. The “Program Evaluation and Review Technique” or PERT, developed as part of the United States Navy’s Polaris missile submarine program; and
2. The “Critical Path Method” (CPM) developed in a joint venture by both DuPont Corporation and Remington Rand Corporation for managing plant maintenance projects.

In 1969, the Project Management Institute (PMI) was formed to serve the interest of the project management industry. The premise of PMI is that the tools and techniques of project management are common even among the widespread application of projects from the software industry to the construction industry. In 1981, the PMI Board of Directors authorized the development of what has become the Guide to the Project Management Body of Knowledge, containing the standards and guidelines of practice that are widely used throughout the profession.

Various Definitions of Project Management

“Project management is the application of knowledge, skills, tools and techniques to a broad range of activities in order to meet the requirements of the particular project. A project is a temporary endeavor undertaken to achieve a particular aim. Project management knowledge and practices are best described in terms of their component processes. These processes can be placed into five Process Groups: Initiating, Planning, Executing, Controlling and Closing.”

“The leadership role which plans, budgets, coordinates, monitors and controls the operational contributions of property professionals, and others, in a project involving the development of land in accordance with a client’s objectives in terms of quality, cost and time.”

“A controlled process of initiating, planning, executing, and closing down a project.”

“Both a process and set of tools and techniques concerned with defining the project’s goal, planning all the work to reach the goal, leading the project and support teams, monitoring progress, and seeing to it that the project is completed in a satisfactory way.”

“The application of modern management techniques and systems to the execution of a project from start to finish, to achieve predetermined objectives of scope, quality, time and cost, to the equal satisfaction of those involved.”

“Project management is concerned with the overall planning and coordination of a project from inception to completion aimed at meeting the client’s requirements and ensuring completion on time, within cost and to required quality standards. Project management is typically carried out either by a private consultant or an employee of the project client.”

“Manages the production of projects with schedules and tasks associated with the project. It often involves detailed expertise in many of the following areas: planning, cost management, contract negotiations/procurement, technical writing (proposals, etc.), research, technical development, information/computer management, business development, corporate/administrative management, time management, and others.”

“The methods and disciplines used to define goals, plan and monitor tasks and resources, identify and resolve issues, and control costs and budgets for a specific project.”

“May be used in a project manufacturing environment for production scheduling or in a variety of one off projects throughout all types of organisation.”

www.homercomputer.com.au/homer_software_guide/glossary.htm

“The action of managing a project. It can involve many activities, from scheduling to communication. Project Management in TOC is outcomes based as opposed to activity based, and TPACC software is an ideal tool used to measure the progress toward the financial outcome.”

“Approach used to manage work with the constraints of time, cost and performance targets

“This is managing the resources needed to ensure that a project is finished on time and within budget and to the satisfaction of the end user. Project managers use tools such as PERT and Gantt charts for scheduling all the tasks that need to be completed. They are conscious of managing time, scope and resources for a project. To reduce time to complete a project the manager might decide to employ more workers which would increase costs.”

michaelmnz.tripod.com/dictionary.htm “The planning, control and coordination of all aspects of a project, and the motivation of all those involved in it, in order to achieve the project objectives.”

“Project management is the discipline of defining and achieving targets while optimizing the use of resources (time, money, people, space, etc). Thus, it could be classified into several models: time, cost, scope, and intangibles.”

Project Management

The successful project management is all about structure, control, sufficient attention to detail and continuously driving action. The role of the project manager is to understand enough project management to apply its structure and ensure that project is successfully completed within the time and cost required. The things you must do as a project manager are:

Ensure there is a clear understanding why a project is being done, and what it will produce.

Plan the project – to understand how long it will take and how much it will cost.

Manage the project – to ensure that as the project progresses, it achieves the objectives you have defined within the time and cost specified.

Complete the project properly – to make sure everything produced by the project is of the quality expected and works as required.

Caution A clear understanding of the project is necessary before a project is initiated and implemented.

Project Management has emerged because the characteristics of our turn-of-the-century society demand the development of the new methods of management. Of the many forces involved, three are paramount:

The exponential expansion of the human knowledge;

The growing demand for a broad range of complex, sophisticated, customized goods and services; and

1. The evolution of worldwide competitive markets for the production and consumption of goods and services.

All three forces combine to mandate the use of terms to solve problems that used to be solvable by individuals. These three forces combine to increase greatly the complexity of goods and services produced plus the complexity of the process used to produce them and all this in turn leads to the need for more sophisticated systems to control both outcomes and processes.

As the techniques of project management were developed, the use of project organization began to spread. Private construction firms found that project organization was helpful on smaller projects, such as the building of a warehouse or an apartment complex. Automotive companies used project organization to develop new automobile models. Both General Electric and Pratt & Whitney used project organization to develop new jet aircraft engines for airlines, as well as the Air Force. Project management has even been used to develop new models of shoes and ships.

More recently, the use of project management by international organizations, and especially organizations producing services rather than products, has grown rapidly. Advertising campaigns, global mergers, and capital acquisitions are often handled as projects, and the methods have spread to the non-profit sector. Functions, weddings, fund drives, election campaigns, parties, recitals etc all make use of the principles of project management. Most striking has been the widespread adoption of project management techniques for the development of computer software.

Project Manager and his Responsibilities

According to Project Management Institute (PMI): *“Project Management is the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations”.*

Project Management is quite often the province and responsibility of an individual project manager. This individual seldom participates directly in the activities that produce the end result, but rather strives to maintain the progress and productive mutual interaction of various parties in such a way that overall risk of failure is reduced.

A project manager is often a client representative and has to determine and implement the exact needs of the client based on knowledge of the firm he/she is representing. The ability to adapt to the various internal procedures of the contracting party, and to form close links with the nominated representatives, is essential in ensuring that the key issues of cost, time, quality and above all client satisfaction, can be realized. Any type of product or service - buildings, vehicles, electronics, computer software, financial services, etc. - may have its implementation overseen by a project manager and its operations by a product manager.

The project manager needs to be an HRD expert who can motivate the workforce by training

and promoting leadership among them, and boost their morale by incentives and promotions. He has to be conversant with the principles of organisation, and be a good judge of people who has the ability to place the right man in the right job at the right time.

Social issues: A project can only be successful when there is no conflict between the management and the local populace. Right from the acquisition of the project land to recruitment to organisation to infrastructural facilities, the management has to interact with the social fabric of the locale. It can only ensure a smooth functioning at the project site if there is a 'cooperational', and not a 'confrontational' environment. The management can display its cordiality to the locals by, for instance, recruiting 'the sons of the soil' in the workforce, which will not only be conducive to reciprocal cordiality of the populace, but might actually make good business sense in employing labour that is familiar with the locale and the conditions prevalent at the project site.

Caution Project manager should be an HRD expert to motivate the workforce and avoid any conflict between the management and the workforce.

Functions of Project Manager

The functions are as follows:

1. Developing a unique product or process and manage change.
2. Identification of the need for project.
3. Finding different alternatives of the project.
4. Developing a plan of action.
5. Training operators.
6. Establishment of quality assurance cell to control quality.
7. Incorporation of changes as and when needed while implementing project.
8. Selection of suitable equipment.
9. Finding suitable financial resources.
10. Assessment of alternatives and obtaining approval to proceed.
11. Measuring performance of the project.
12. Transfer of material, funds and settling all accounts after completion of project.
13. Monitoring progress and reporting to higher authorities.

14. Closing all records, submission of final report and transfer of

responsibility after completion of specified project.

Self Assessment

Fill in the blanks:

1. The successfulis all about structure, control, sufficient attention to detail and continuously driving action.
2. A project can only be successful when there is no conflict between the and the local populace.
3. Project Management is quite often the province and responsibility of an individual
4. The project manager needs to be anexpert who can motivate the workforce by training and promoting leadership among them.
5. companies used project organization to develop new automobile models.

PM as a Profession

Not all project managers are equally competent. Not all project managers have the ability to run programs, establish PMOs, strategically align project portfolio's, recover big projects, or manage risk effectively. Not every doctor is capable of heart surgery. But doctor's get paid for being doctor's, have demonstrated considerable training and understanding, have spent thousands of hours mastering their jobs. Doctor's are professionals.

By any definition, Project Management is a profession.

It should be obvious to the reader that project management is a demanding job. Planning and controlling the complexities of a project's activities, schedule, and budget would be difficult even if the project had the highest claim on the parent organization's knowledge and resources, and if the PM had full authority to take any action required to keep the project on course for successful completion. Such is never the case, but all is not lost because there are tools available to bring some order to the chaos of life as a PM—to cope with the difficulties of planning and the uncertainties that affect budgets and schedules. Also, as we have indicated, it is possible to compensate for missing authority through negotiation. Mastering the use of project management tools requires specialized knowledge that is often

acquired through academic preparation, which is to say that *project management is a profession*. The profession comes complete with career paths and an excellent professional organization. The Project Management Institute (PMI) was founded in 1969. By 1990, the PMI had 7500 members. It grew to 17,000 by 1995, but five years later membership had exploded to more than 64,000. By November 2009, the PMI had more than 300,000 members worldwide. The exponential growth of the PMI is the result of the exponential growth in the use of projects and PMs as a way of getting things done.

Example: A senior vice president of an international chemical firm installed project management as a way of controlling the workloads on his technical specialists and on a few overloaded facilities – project management having tools to handle the allocation of scarce resources. In another instance, a new CEO of a large hospital mandated that all non-routine, one time operations be managed as projects so that she could have information on the nature and status of all such activities.

Selection of a Project Manager

The Selection of Project Manager depends on following points:

Problem Solving Skills

1. Does this person have a history of being able to solve complex problems?
2. Does this person have the attitude that a problem is an opportunity to learn?

Personal Leadership Style

1. Does this person have the communications and people skills appropriate for the mix of people who will be required on this project?
2. Will this person encourage project team members to bring up problems rather than play the blame game?
3. Does this person have excellent time management skills?

Organizational Experience

1. Does this person know how work gets done in this organization?
Is this person experienced in working in similar organizations and is that experience transferable to this project?
3. Does this person know the politics of our organization and have the savvy to navigate these situations?

Skills and Knowledge

Does this person have adequate knowledge about the subject of this project?

1. If some of these skills are weak is there support available in the organization to offset the problem?
2. Does this person have adequate technical skills for this project?
3. Does this person have the skills understand the root causes of potential problems and keep them from reoccurring?

Project Management Experience

1. Has this person led projects of similar scope, size, length and priority?
2. Is this person on a growth track to lead more complex projects?

Fitting Projects into Parent Organisation

Earlier in this unit we referred several times to problems caused by the way projects are organized and fit in as a part of the parent organization. It is now time to deal with this subject. It would be most unusual for a PM to have any influence over the interface between the project and the parent organization. This arrangement is a matter of company policy and usually is decided by senior management. The nature of the interface, however, has a major impact on the PM's life, and it is necessary that the PM understand why senior managers make what appears to be the worst of all possible choices for the interface.

More on "Why Projects?"

Before examining the alternative ways in which a project can interface with the organization, it is useful to add to our understanding of just why organizations choose to conduct so much of their work as projects. We spoke above of project-oriented firms. In addition to the managerial reasons that caused the rapid spread of such organizations, there were also strong economic reasons. First, devising product development programs by integrating product design, engineering, manufacturing, and marketing functions in one team not only improved the product, it also allowed significant cuts in the time-to-market for the product.

Example: In the 1990s, Chrysler Motors (now owned by Fiat) cut almost 18 months from the new product development time required for design-to-street and produced designs that were widely rated as outstanding. This brought new Chrysler models to market much faster than normal in the automotive industry. Quite apart from the value of good design, the economic value of the time saved is immense and derives from both reduced design labor

and overhead, plus earlier sales and return on the investment – in this case amounting to hundreds of millions of dollars. The same methods were used to enable General Motors to redesign and reimage their Cadillac and Buick models in response to the sharp decline in demand during the steep business downturn of 2008. This same process also allows a firm to tailor special versions of standard products for individual clients.

Project Management Team

We have mentioned the project team several times in the foregoing sections. Effective team members have some characteristics in common. Only the first of these is usually taken into account:

1.They must be *technically competent*. This is so obvious that it is often the only criterion applied. While the functional departments will always remain the ultimate source of technological problem solving for the project, it requires a technically competent person to know exactly when additional technical knowledge may be required by the project.

2.Senior members of the project team must be *politically sensitive*. It is rarely possible to complete a project of reasonable size and complexity without incurring problems that require aid from the upper echelons of executive row; that is, from a *project champion* (Pinto and Slevin, 1989). Getting such aid depends on the PM's ability to proceed without threatening, insulting, or bullying important people in the functional groups. To ensure cooperation and assistance, there is a delicate balance of power that must be maintained between the project and the functional departments, and between one project and others.

3.Members of the project team need a strong *problem orientation*. This characteristic will be explained in more detail shortly. For now, take the phrase to mean that the team's members should be concerned about solving any problems posed by the project, not merely about those sub problems that concern their individual academic or technical training.

4.Team members need a strong *goal orientation*. Projects are uncomfortable environments for people with a 9 to 5 view of work. In particular, neither project teams nor PMs can succeed if their focus is on activity rather than results. On the other hand, the project will not be successful if the project team dies from overwork. One project team member of our acquaintance was bemoaning a series of 60+ hour weeks. "They told me that I would work about 50 hours in an average week. I've been on this project almost 18 months, and we haven't had an average week yet."

5.Project workers need *high self-esteem*. Project members who hide mistakes and failure are disasters waiting to happen. Team members must be sufficiently self-confident and have sufficient trust in their fellow team members (Lencioni, 2002) that they can immediately acknowledge their own errors and point out problems caused by the errors of others. PMs

should note that “shooting the messenger” who brings bad news will instantly stop the flow of negative information. The result is that the golden rule we stated above, “Never let the boss be surprised,” will be violated, too.

Did u know? Are you doing a project? A project is a temporary endeavour with a specific result or objective. If your project has no end in sight and/or no clear scope, then what- ever it is you’re doing may be important, but it’s not a project. You’ll have a hard time showing

your team that they’re being successful.

Self Assessment

State True or False:

7.The Project Management Institute (PMI) was founded in 1989.

8.Project Management Team must be physically competent.

9.Senior members of the project team must be *politically sensitive*.

Phases of Project Management

Dividing a project into phases makes it possible to lead it in the best possible direction. Through this organisation into phases, the total work load of a project is divided into smaller Components, thus making it easier to monitor. The following paragraphs describe a phasing model that has been useful in practice. It includes six phases:

Initiation Phase

The initiation phase is the beginning of the project. In this phase, the idea for the project is explored and elaborated. The goal of this phase is to examine the feasibility of the project. In addition, decisions are made concerning who is to carry out the project, which party (or parties) will be involved and whether the project has an adequate base of support among those who are involved.

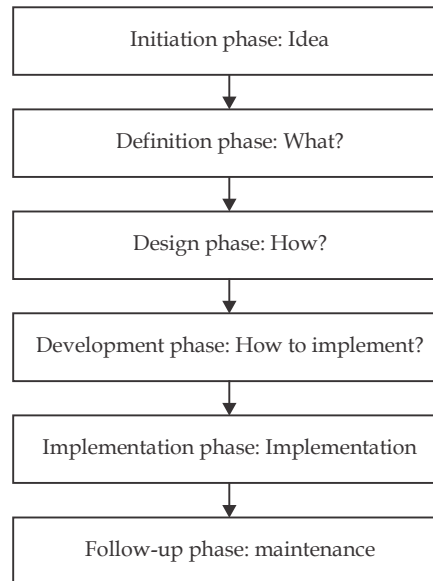
In this phase, the current or prospective project leader writes a proposal, which contains a description of the above-mentioned matters. Examples of this type of project proposal include business plans and grant applications. The prospective sponsors of the project evaluate the proposal and, upon approval, provide the necessary financing. The project officially begins at the time of approval.

Questions to be answered in the initiation phase include the following:

(a)

Why this project?

Figure 1.1: Project Management in Six Phases, with the Central Theme of Each Phase



- (b) Is it feasible?
- (c) Who are possible partners in this project?
- (d) What should the results be?
- (e) What are the boundaries of this project (what is outside the scope of the project)?

In the initiation phase, the project partners enter a (temporary) relationship with each other. To prevent the development of false expectations concerning the results of the project, it makes sense to explicitly agree on the type of project that is being started:

- (a) a research and development project;
- (b) a project that will deliver a prototype or 'proof of concept'; and
- (c) a project that will deliver a working product.

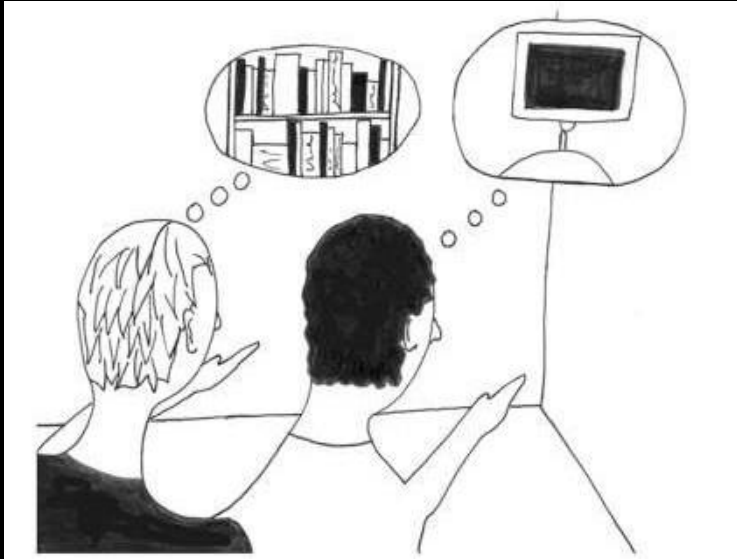
The choice for a particular type of project largely determines its results.

Example: A research and development project delivers a report that examines the technological feasibility of an application. A project in which a prototype is developed delivers all of the functionalities of an application, but they need not be suitable for use in a particular context (e.g. by hundreds of users). A project that delivers a working product must also consider matters of maintenance, instructions and the operational management of the application.

Definition Phase

After the project plan (which was developed in the initiation phase) has been approved, the project enters the second phase: the definition phase. In this phase, the requirements that are associated with a project result are specified as clearly as possible. This involves identifying the expectations that all of the involved parties have with regard to the project result. How many files are to be archived? Should the metadata conform to the Data Documentation Initiative format, or will the Dublin Core (DC) format suffice? May files be deposited in their original format, or will only those that conform to the Preferred Standards be accepted? Must the depositor of a dataset ensure that it has been processed adequately in the archive, or is this the responsibility of the archivist? Which guarantees will be made on the results of the project? The list of questions goes on and on.

Figure 1.2: Expectations of a Project



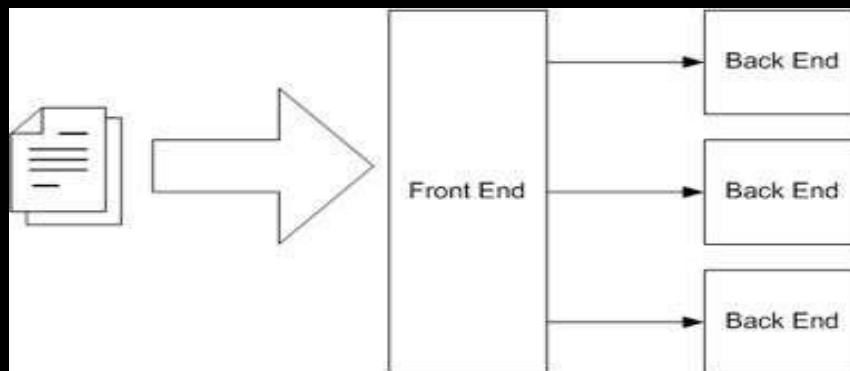
Source: Rachèl Harmsen



Design Phase

The list of requirements that is developed in the definition phase can be used to make design choices. In the design phase, one or more designs are developed, with which the project result can apparently be achieved. Depending on the subject of the project, the products of the design phase can include dioramas, sketches, flow charts, site trees, HTML screen designs, prototypes, photo impressions and UML schemas. The project supervisors use these designs to choose the definitive design that will be produced in the project. This is followed by the development phase. As in the definition phase, once the design has been chosen, it cannot be changed in a later stage of the project.

Figure 1.3: Global Design for the DANS Architecture Archive



In a young, very informal company, the design department was run by an artist. The term design department was not accurate in this case; it was more a group of designers who were working together. In addition, everyone was much too busy, including the head of the department.

One project involved producing a number of designs, which were quite important to the success of the project. A young designer on the project team created the designs. Although the head of the design department had ultimate responsibility for the designs, he never attended the meetings of the project team when the designs were to be discussed. The project leader always invited him, and sent him e-mails containing his young colleagues sketches, but the e-mails remained unanswered. The project leader and the young designer erroneously assumed that the department head had approved the designs. The implementation phase began. When the project was nearly finished, the result was presented to the department head, who became furious and demanded that it be completely redone. The budget, however, was almost exhausted.

Development Phase

During the development phase, everything that will be needed to implement the project is

arranged. Potential suppliers or subcontractors are brought in, a schedule is made, materials and tools are ordered, and instructions are given to the personnel and so forth. The development phase is complete when implementation is ready to start. All matters must be clear for the parties that will carry out the implementation.

In some projects, particularly smaller ones, a formal development phase is probably not necessary. The important point is that it must be clear what must be done in the implementation phase, by whom and when.

Implementation Phase

The project takes shape during the implementation phase. This phase involves the construction of the actual project result. Programmers are occupied with encoding, designers are involved in developing graphic material, contractors are building, and the actual reorganization takes place. It is during this phase that the project becomes visible to outsiders, to whom it may appear that the project has just begun. The implementation phase is the doing phase, and it is important to maintain the momentum.

In one project, it had escaped the project teams' attention that one of the most important team members was expecting to become a father at any moment and would thereafter be completely unavailable for about a month. When the time came, an external specialist was brought in to take over his work, in order to keep the team from grinding to a halt. Although the team was able to proceed, the external expertise put a considerable dent in the budget.

At the end of the implementation phase, the result is evaluated according to the list of requirements that was created in the definition phase. It is also evaluated according to the designs.

Example: Tests may be conducted to determine whether the web application does indeed support Explorer 5 and Firefox 1.0 and higher. It may be determined whether the trim on the building has been made according to the agreement, or whether the materials that were used were indeed those that had been specified in the definition phase. This phase is complete when all of the requirements have been met and when the result corresponds to the design.

Follow-up Phase

Although it is extremely important, the follow-up phase is often neglected. During this phase, everything is arranged that is necessary to bring the project to a successful completion. Examples of activities in the follow-up phase include writing handbooks, providing instruction and training for users, setting up a help desk, maintaining the result, evaluating the project itself, writing the project report, holding a party to celebrate the result that has been achieved, transferring to the directors and dismantling the project team.

The central question in the follow-up phase concerns when and where the project ends. Project leaders often joke among themselves that the first ninety per cent of a project proceeds quickly and that the final ten per cent can take years. The boundaries of the project should be considered in the beginning of a project, so that the project can be closed in the follow-up phase, once it has reached these boundaries.

It is sometimes unclear for those concerned whether the project result is to be a prototype or a working product. This is particularly common in innovative projects in which the outcome is not certain. Customers may expect to receive a product, while the project team assumes that it is building a prototype. Such situations are particularly likely to manifest themselves in the follow-up phase. Consider the case of a software project to test a very new concept.

There was some anxiety concerning whether any results would be produced at all. The project eventually produced good results. The team delivered a piece of software that worked well, at least within the testing context. The customer, who did not know much about IT, thought that he had received a working product. After all, it had worked on his office computer. The software did indeed work, but when it was installed on the computers of fifty employees, the prototype began to have problems, and it was sometimes instable.

Caution Follow-up being the last stage of the project should not be ignored and should be taken seriously till the project is completed successfully.

Project Environment

Today, there is a growing awareness and concern for the impact of infrastructure and facility construction on the physical environment. Fortunately, today's technological disciplines responsible for such work are becoming attuned to the idea of mitigating the adverse impacts of their projects. Certainly the project manager needs to be similarly concerned about the project's technology, and manage accordingly. This applies to both the implementation and shorter term practical construction impacts of the project as well as its conceptual development and consequent long term impacts. However, today's project manager also needs to be attuned to the cultural, organizational and social environments of the project. Understanding this environment includes identifying the project stakeholders and their ability to affect its successful outcome. This means working with people to achieve the best results, especially in the highly technical and complex environments such as those involving modern day construction projects. Therefore, it is essential that the project manager and his or her project team are comfortable with, and sympathetic towards, their cultural, organizational and social surroundings.

This leads to the possibility of influencing the project environment in a positive way, for the

better reception of the change which the project is designed to introduce.

Example: Peoples' typical resistance to change will no doubt be evident amongst some of the stakeholders. Others may have vested interests or personal or group agendas which are only indirectly related to the project. If these can be identified in good time, they may be dealt with proactively and in such a way that the corresponding risks, which are otherwise likely to undermine the success of the project, can be significantly reduced. Failure to take such an approach will inevitably lead to a less than optimum project outcome.

Dimensions of the Project Environment

For convenience, and working outwards, the project environment may be thought of in terms of the project time environment, the internal project culture, the original corporate culture, and the external social surroundings. For those who have not had experience of a construction project "in the trenches" so to speak, it is sometimes difficult to capture the feeling of pressure, stress and ultimate satisfaction of a project well.

Did u know? Gantt Charts have been around for over a hundred years. The discipline of project management has evolved and been refined for longer than you might suspect.

The 7S of Project Management

A recent (2008) update on the McKinsey 7S model is a short podcast on the creation of McKinsey 7S model by Lowell Bryan, a director in McKinsey's New York office, involved in creating and applying the 7S framework. He describes how it was introduced in the late 1970s to address the critical role of coordination, rather than structure, in organizational effectiveness.

We reference the McKinsey 7S model in the E-consultancy Managing an E-commerce team report as a method of reviewing the internal capabilities of an organisation to manage digital channels. Some of the key issues that require management are shown in the table

Self Assessment

Fill in the blanks:

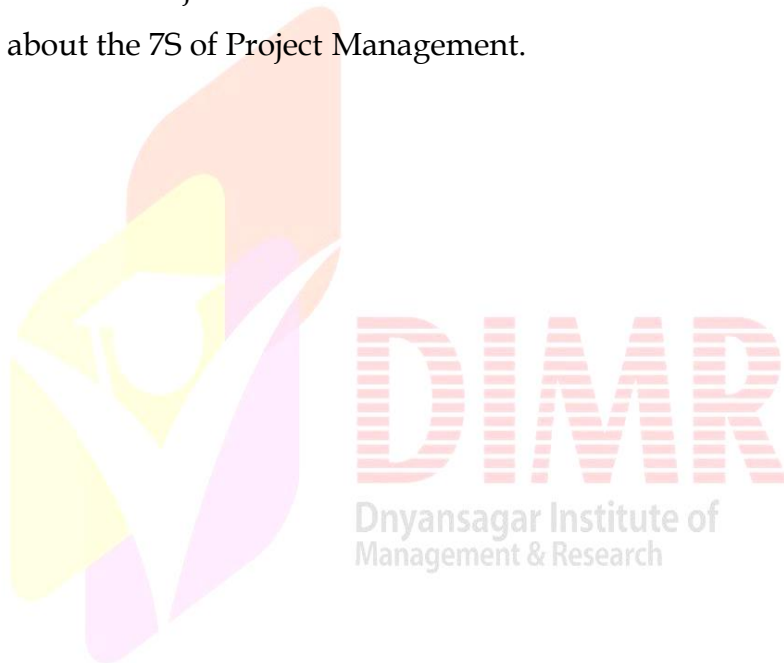
10. The..... of initiation phase is to examine the feasibility of the project.
11. The..... takes shape during the implementation phase.
12. There is a growing awareness and concern for the impact of infrastructure and facility construction on theenvironment.
13. The.....use these designs to choose the definitive design that will be produced in the project.

Summary

- A project is a group of unique, interrelated activities that are planned and executed in a certain sequence to create a unique product or service.
- The successful project management is all about structure, control, sufficient attention to detail and continuously driving action.
- Plan the project – to understand how long it will take and how much it will cost.
- Project Management is quite often the province and responsibility of an individual project manager.
- A project manager is often a client representative and has to determine and implement the exact needs of the client based on knowledge of the firm he/she is representing.
- Project Management Institute (PMI) was founded in 1969.
- The payback period for a project is the initial fixed investment in the project divided by the estimated annual cash inflows from the project.
- The initiation phase is the beginning of the project.
- The project takes shape during the implementation phase.

Review Questions

1. Define the term “Project Management”.
2. Explain about the responsibilities of a project Manager.
3. Discuss about Project Management as a Profession.
4. Describe about the selection of a Project Manager.
5. Explain about fitting projects in the parent organisation.
6. Discuss about Project Management Team.
7. What are the phases of Project Management?
8. Discuss about the Project Environment.
9. Describe about the 7S of Project Management.





Case Study Who is the Project Manager?

Assigning Project Management Responsibility for Success

A project manager's prime task is managing a project to success. The products of the project need to be picked up by the line organisation, and if this involves change in the organisation or ways of working, the changes must be made to 'stick'. By ensuring that the responsibilities for project management and business change are well assigned in a project there is an increased chance of success.

The Dilemma

In all projects assigning the correct project manager is crucial. The choice is often not simple. I have experienced this in the form of a dilemma: do we appoint someone who is an experienced project manager or someone who will champion the change? Very often the experienced project manager will come from a technical background, e.g. IT, and will not have authority to make changes in the organisation or processes. On the other hand the change champion will have credibility with the business unit, but often not have the project skills required. If you can always find all of this in one person, then good luck to you; you don't need the rest of this article!

When is This a Problem?

There can be a problem in a project that is not part of a programme. Let's look at the differences between programmes and projects. I'll use MSP™ (Managing Successful Programmes of the OGC) to illustrate. MSP clearly differentiates between projects - that deliver outputs - and programmes - that deliver outcomes. The main difference is that a project that is not part of a programme delivers the output to the line organisation; the line management is subsequently responsible for achieving the benefits (outcomes). A programme, on the other hand, is also responsible for the benefits realisation of the projects within the programme.

I have noticed, in our organisation at least, that projects are expected to deliver the change in the organisation, so the outcome is not achieved if the project only delivers the output.

How Does it go Wrong?

To ensure a good mix of business change and project management, for IT projects, we have in the past staffed projects with a project manager from the customer, a "business PM" or BPM, and an experienced project manager from IT, the "IT PM", reporting to them. This can work well, depending on the individuals and how well they cooperate and complement

Project Steering		
Corporate Management		
Group		
S e n i o r U s e r	S p o n s o r	S e n i o r S u p p l i e r

BCM

PM

Change Agents

Team Members

= from the customer
= from the supplier(s)
= delivery specialists

The Project Life Cycle

Objectives

After studying this unit, you will be able to:

- Discuss about Concept of Project Management
- Define Project Life Cycle
- Describe about Extended Project Life Cycle
- Explain about Project Classification

Introduction

Essentially, a project is a task with a known end point. For example, building a new house is a project, the end point being when the house is built. Similarly, creating a new piece of computer software is a project, as is launching a new product for a business. Projects can be used to complete many different types of tasks.

Usually the term 'project' is applied to tasks with some degree of complexity. Projects fulfil some clear predefined objective, in a planned period of time, and to a planned cost. Once the project is complete something will have changed – for example, you have a new house, a new computer system or a new product.

The Project Management Institute defines a project as *"a temporary endeavor undertaken to create a unique product or service"*. There is a rich variety of projects to be found in our society. Although some may argue that the construction of the Tower of Babel or the Egyptian pyramids was some

of the first projects, it is probable that cavemen formed a project to gather the raw material for mammoth stew. Modern project management, however, is usually said to have begun with the Manhattan Project. In its early days, project management was used mainly for very large, complex Research and Development (R&D) projects like the development of the Atlas Intercontinental Ballistic Missile and similar military weapon systems. Massive construction programs were also organized as projects the construction of dams, ships, refineries, and freeways, among others.

Concept of Project Management

Project management is a formal discipline for managing projects. Project management has been developed over the past few decades as it has become apparent that without a structured approach, people are not very good at completing projects successfully. The aim of project management is to ensure that projects are completed and that the end point (the new house, computer system or new product) is achieved. More than this, project management is about reaching that end point predictably, which usually means to a given cost and within a planned amount of time.

The successful project management is all about structure, control, sufficient attention to detail and continuously driving action. The role of the project manager is to understand enough project management to apply its structure and ensure that project is successfully completed within the time and cost required. The things you must do as a project manager are:

1. Ensure there is a clear understanding why a project is being done, and what it will produce.
2. Plan the project – to understand how long it will take and how much it will cost.
3. Manage the project – to ensure that as the project progresses, it achieves the objectives you have defined within the time and cost specified.
4. Complete the project properly – to make sure everything produced by the project is of the quality expected and works as required.

Project Management has emerged because the characteristics of our turn-of-the-century society demand the development of the new methods of management. Of the many forces involved, three are paramount:

1. The exponential expansion of the human knowledge;
2. The growing demand for a broad range of complex, sophisticated, customized goods and services;
3. The evolution of worldwide competitive markets for the production and consumption of goods and services.

All three forces combine to mandate the use of terms to solve problems that used to be solvable by individuals. These three forces combine to increase greatly the complexity of goods and services produced plus the complexity of the process used to produce them and all this in turn leads to the need for more sophisticated systems to control both outcomes and processes.

As the techniques of project management were developed, the use of project organization began to spread. Private construction firms found that project organization was helpful on smaller projects, such as the building of a warehouse or an apartment complex. Automotive companies used project organization to develop new automobile models. Both General Electric and Pratt & Whitney used project organization to develop new jet aircraft engines for airlines, as well as the Air Force. Project management has even been used to develop new models of shoes and ships.

More recently, the use of project management by international organizations, and especially organizations producing services rather than products, has grown rapidly. Advertising

campaigns, global mergers, and capital acquisitions are often handled as projects, and the methods have spread to the non-profit sector. Functions, weddings, fund drives, election campaigns, parties, recitals etc all make use of the principles of project management. Most striking has been the widespread adoption of project management techniques for the development of computer software.

Did u know? Each project phase is marked by completion of one or more deliverables. A *deliverable* is a tangible, verifiable work product. The conclusion of a project phase is generally marked by (a) completion and review of both key deliverables and project performance to date, to (b) determine if the project should continue into its next phase and (c) detect and correct errors cost effectively.

Self Assessment

Fill in the blanks:

1. The successfulis all about structure, control, sufficient attention to detail and continuously driving action.
2. Project management is a formal discipline forprojects.
3. Projects.....with functional departments for resources and personnel.
4. construction firms found that project organization was helpful on smaller projects, such as the building of a warehouse or an apartment complex.
5. The role of the is to understand enough project management to apply

its structure and ensure that project is successfully completed within the time and cost required.

Project Life Cycle

Like organic entities, projects have life cycles. From a slow beginning they progress to a buildup of size, then peak, begin a decline, and finally must be terminated. Some projects end by being phased into the normal, ongoing operations of the parent organization.

Interdependencies

Projects often interact with other projects being carried out simultaneously by their parent organization; but projects always interact with the parent organization's standard, ongoing operations. Although the functional departments of an organization (marketing, finance, manufacturing, and the like) interact with one another in regular, patterned ways, the patterns of interaction between projects and these departments tend to be changeable. Marketing may be involved at the beginning and end of a project, but not in the middle. Manufacturing may have major involvement throughout. Finance is often involved at the beginning and accounting at the end, as well as at periodic reporting times. The PM must keep all these interactions clear and maintain the appropriate interrelationships with all external groups.

Uniqueness

Every project has some elements that are unique. No two construction or R&D projects are precisely alike. Though it is clear that construction projects are usually more routine than R&D projects, some degree of customisation is a characteristic of projects. In addition to the presence of risk, as noted earlier, this characteristic means that projects, by their nature, cannot be completely reduced to routine. The PM's importance is emphasized because, as a devotee of management by exception, the PM will find there are a great many exceptions to manage by.

Purpose

A project is usually a one time activity with a well-defined set of desired end results. It can be divided into subtasks that must be accomplished in order to achieve the project goals. The project is complex enough that the subtasks require careful coordination and control in terms of timing, precedence, cost, and performance. Often, the project itself must be coordinated with other projects being carried out by the same parent organization.

Caution Simultaneous projects often interact with other projects in terms of the functional departments. Thus, the project manager must keep all these interactions clear and maintain the appropriate interrelationships with all external groups.

Conflict

More than most managers, the PM lives in a world characterized by conflict. Projects compete with functional departments for resources and personnel. More serious, with the growing proliferation of projects, is the project versus project conflict for resources within multi-project organizations. The members of the project team are in almost constant conflict for the project's resources and for leadership roles in solving project problems. If the characteristics listed above define a project, it is appropriate to ask if there are non-projects. There are. The use of a manufacturing line to produce a flow of standard products is a non-project. The production of weekly employment reports, the preparation of school lunches, the delivery of mail, the flight of Delta, 1288 from Dallas to Dulles, checking your e-mail, all are non-projects.

Now we know that a project is a specific, finite task to be accomplished. Whether large or small scale or whether long or short run is not particularly relevant. What is relevant is that the whole project should be taken as a single unit. There are, however, some attributes that characterize projects.

Every project goes through various stages in its development. These stages vary depending on the type of project. For example, a project to build a new car has different stages compared to a project to develop an advertising campaign for a new type of washing detergent. However, at a generic level projects must go through common steps such as:

1. Specifying in detail what the project is for.
2. Planning the project and working out how it will be done.
3. Doing the project and creating the deliverables according to the plan.
4. Checking that the deliverables are as you originally wanted and meet the needs.
5. Closing the project down.

These five steps defined are a simple project lifecycle. The lifecycle is a skeleton framework which you can build your project around. From a slow beginning, they progress to a buildup of size, then peak, after that a decline, and finally they are terminated. Some projects end up by being phased out into the normal, ongoing operations of the parent organization.

Caution A project is a complex activity and thus, it end-term project objectives. Thus, careful coordination and control is required for successful completion of the project.

Delivery and Deliverables

There is a word that project managers and people involved regularly in projects use all the time; it is delivery. Delivery in the context of projects simply means getting the things done you set out to do. The role of a project manager is therefore to deliver the project. Delivery is a useful piece of jargon as it saves having to write 'completing the project to the expected time and cost with the desired outcome' again and again!

Deliverables are what is delivered by a project so taking the examples above, the deliverables from the respective projects are a new house, a new computer system or a new product. In a project the deliverables wanted are defined at the start of the project, and your success as a project manager is in delivering them in the planned time and to the expected cost.

Did u know? The aim of project management is to ensure that projects are completed and that the end point (the new house, computer system or new product) is achieved.

Overlapping of Activities

Projects often interact with other projects being carried out simultaneously by their parent organization; but projects always interact with the parent organization's standard, ongoing operations. Although the functional departments of an organization (marketing, finance, manufacturing, and the like) interact with one another in regular, patterned ways, the patterns of interaction between projects and these departments tend to be changeable. Marketing may be involved at the beginning and end of a project, but not in the middle. Manufacturing may have major involvement throughout. Finance is often involved at the beginning and accounting at the end, as well as at periodic reporting times. The PM must keep all these interactions clear and maintain the appropriate interrelationships with all external groups.

Sharing of Resources

More than most managers, the PM lives in a world characterized by conflict. Projects compete with functional departments for resources and personnel. More serious, with the growing proliferation of projects, is the project versus project conflict for resources within multi-project organizations. The members of the project team are in almost constant conflict for the project's resources and for leadership roles in solving project problems.

There is much discussion about whether there is only one 'true' model of a project life cycle or many, and whether any of these are reasonably accurate descriptions of what happens in real life. Some writers include the feasibility study as part of the project life cycle; others believe that the project proper only begins once the feasibility study is completed and the proposal accepted, or only when cost codes and a budget for the project are defined by the company accountants. We will use the point of conception, even though the actual circumstances can make that gestation period rather cloudy or uncertain. The practical starting point is often considered to be the birthday, since management normally gives approval after they have been presented with the feasibility study and decided to go ahead

with further work. If you find it helpful, you can think of the work needed to carry out a feasibility study as being a mini-project in its own right.

Even with the best of plans and most stringent of controls, real life is always more chaotic than the models we apply to it; the same is true of projects. Nevertheless, in the case of projects, models are useful to help us recognize different ways of moving from the project's beginning to its end, and the broad phases where the activities that take place change from one type to another. Each activity will be undertaken using a known procedure at a given level of formality, starting with a number of inputs from preceding activities that are the basis for further work. On completion of an activity there may be one or more outputs, which are known as deliverables (because they are needed for other activities). So, the order in which these activities are carried out is called a **life cycle**, which outlines the overall process for a given project. A **phase** is the term used to describe a set of interrelated activities that are needed to achieve a particular outcome or deliverable. When a life cycle includes a number of phases, it is usually because some form of evaluation or review is needed to decide when each phase is completed.

There is no single life cycle that applies to all projects, although certain types of project will be associated with a particular life cycle. We begin by describing a basic life cycle and then discuss some variations, which may provide an appropriate model for a given situation. We will use the characteristics of software to illustrate that a project's outcome is more than just a physical object.

In practice, the description of a life cycle may be very general or very detailed: some might only suggest what to do, while others might prescribe what must be done. Highly detailed descriptions might involve numerous forms, models, checklists and so on which have been associated with the term *project management methodology* (see, for example, PMI, 2004).

Caution Projects compete with functional departments for resources and personnel. More serious, with the growing proliferation of projects, is the project versus project conflict for resources within multi-project organizations.

Self Assessment

Fill in the blanks:

6. Projects often interact with other projects being carried out simultaneously by their organization.

7. A project is usually a onetime activity with a well-defined set of end results.

The is a skeleton framework which you can build your project around.

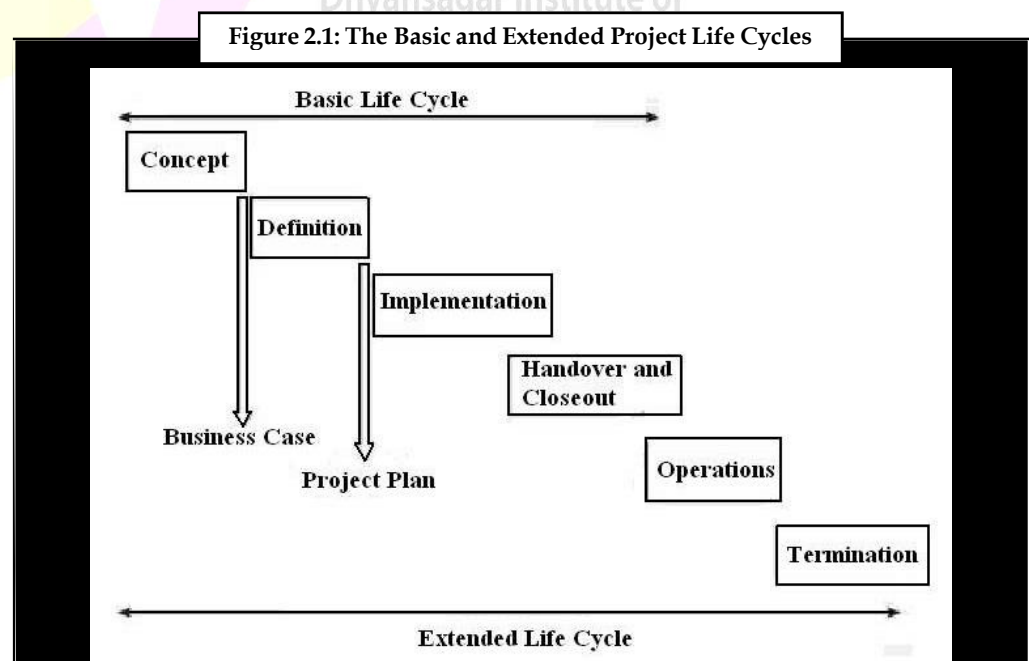
9. Every project has some elements that are
10. The PM must keep all these interactions clear and maintain the appropriate interrelationships with all groups.
11. Projects often interact with other projects being carried out simultaneously by their organization.

Project Classification and Extended Project Life Cycle

Many writers use four phases when considering life cycles in relation to project management. Turner, for example, used the life cycle of a plant as an analogy to that of a project (1999).

Other writers, such as Weiss and Wysocki (1994), look at the core activities to come up with five phases such as define, plan, organise, execute and close. The change from one phase to the next is not necessarily abrupt. When there is significant overlap in time between activities in different phases (for example, when planning activities continue at the same time as the organisation is under way and execution may even have begun), we say that these activities exhibit **concurrence**. Since changes are an inevitable fact of project life, there will also be times when activities such as estimating or even recruiting or assigning work have to be done again in response to such changes. The overlapping of phases is also called *fast tracking* (PMI, 2004) as it allows the project to be completed in less time than following a strict sequence of phases.

The *basic life cycle*, which will fit many projects, is shown in Figure 2.1.



The *extended life cycle*, which is also known as a product life cycle, also shown in Figure 2.1 involves supporting and maintaining the deliverables in order to realise the project's intended benefits. The extended life cycle adds two more phases to the sequence (APM, 2006):

1. **Operations:** The period during which the completed deliverable is used and maintained in service for its intended purpose.
2. **Termination:** The disposal of the project deliverables at the end of their life.

Projects related to special events, such as an annual conference or a sporting event, make use of the extended life cycle.

When making a case for a new project, part of the work includes the choice of life cycle to use in order to achieve its goal and objectives. If an organisation has been using projects for some time, it is likely that it has developed a particular life cycle for the kinds of project that are approved. The simplest way to classify projects is by industry: for example, construction, mechanical engineering, software development, banking or health care.

At the same time, it is also possible to think of projects in terms of their outcomes, which might be some form of product or service. However, the outcome of many projects has been a combination of products and services. For example, the National Health Service in the UK has sponsored a project for a new service that allows general practitioners to make hospital appointments for their patients in real time (service). In order to achieve the project's objectives, a new software application (product) was developed. Hence, we might consider that one way to classify a project is according to the particular result or outcome that we want to achieve. In addition, it is also reasonable to include a consideration of the means by which the desired outcome is to be achieved. By combining a consideration of means and ends (answering the *how?* and the *what?* questions) for a project, there would be four classes of project according to how much is known about what you are trying to achieve and how you are going to achieve it.

In practice, the two extremes permit a simple qualitative assignment of a project into one of four classes. The use of a metaphor for each class of project helps stakeholders engage in it, which Obeng (2003) employs as follows:

Such a means of project classification is associated with the two main perspectives that are used to evaluate whether or not a project is successful.

Self Assessment

State True or False:

12. The National Health Service in the USA has sponsored a project for a new service that allows general practitioners to make hospital appointments for their patients in real time.
13. The simplest way to classify projects is by industry: for example, construction, mechanical engineering, software development, banking or health cares.
14. Projects compete with functional departments for resources and personnel.
15. The members of the project team are in almost constant conflict for the project's resources and for leadership roles in solving project problems.

Summary

- Project management is a formal discipline for managing projects.
- Projects often interact with other projects being carried out simultaneously by their parent organization.
- Every project has some elements that are unique.
- Projects compete with functional departments for resources and personnel.
- The members of the project team are in almost constant conflict for the project's resources and for leadership roles in solving project problems.
- There is no single life cycle that applies to all projects, although certain types of project will be associated with a particular life cycle.

Review Questions

1. Discuss about the concept of Project Management.
2. What do you know about Project Life Cycle?
3. Explain about Interdependencies.
4. Describe about Uniqueness.
5. Explain about Delivery and Deliverables.
6. Discuss about Project Classification.
7. Define the term "Project Management."

True

14.

T
r
u
e

True

**Case Study HCL: When to do re-estimation?**

software company receives a web based development project from renowned client to develop vehicle tracking system for their organization.

The software company is well set to start the project and preparing the ground work. They have done the sizing exercise based on the requirements shared by the client using Function Point methodology and arrived the size of 200 FP. It is JAVA based technology and by using their organization productivity of 0.8 FP/day (of high skilled resource), the efforts required to complete the development of the project is 250 Person days.

Project manager started the project unfortunately he didn't get skilled resources. When the PM generates EV metrics for 1st week of the project, realized that the project is not going on track and there is 5% variance due to requirements delay from client.

At the end of the 2 weeks PM found that variance is increased to 40%. The reasons added here are resources are not skilled enough to understand the requirements and prepare design documents.

No of days estimated to complete the project = 250 Person Days

No of Months to complete the project allocating 4 resources = $250 / (20 \times 4) = 3.125$ PMs After 2 weeks, when the project manager generates the following metrics:

The project is over budget and behind the schedule (please refer to appendix - A for details on metrics)

PM able to calculate above metrics as he baselined the estimates and plan, compared actuals against baselined efforts.

The remaining size of the application to be developed = 184 FP

To complete 184 FP in 210 person days require = $184/210 = 1.14$ against the 0.8 productivity assumed for initial estimation.

Once the re-estimation done and baseline the Estimation, re-planning should follow and plan

need to be baselined.

Re-estimation at end of the project Phase

An MNC awarded to develop employee leave details Portal

Initially project is sized to 100 FP. It is JAVA based technology and by using their organization productivity of 0.8 FP/day, the efforts required to complete the development of the project is 125 Person days.

At the end of the Requirements phase the size of the project is increased by 50 FP due to scope creep.

	% of Efforts Distribution in project phases	Requirements phase			Design phase		
		FP Size	Person days	Person Hours	FP Size	Person days	Person Hours
Requirements	15	100	18.75	150	150	28.125	225
Design	18		22.5	180		33.75	270
Coding	35		43.75	350		65.625	525
Testing	24		30	240		45	360
Implementation	8		10	80		15	120
Total	100	100	125	1000	150	187.5	1500

Strategic Management and Project Selection

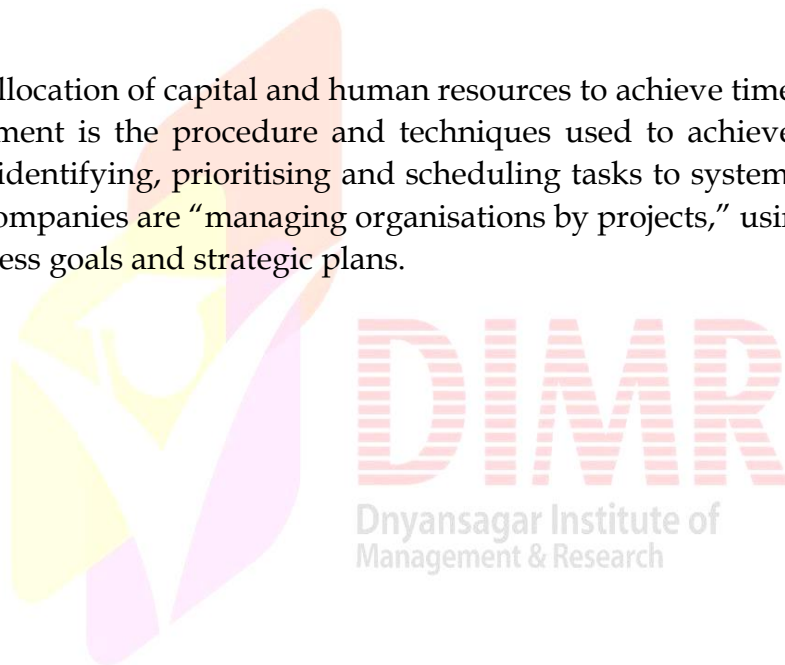
Objectives

After studying this unit, you will be able to:

- Define strategic management and project selection
- Discuss about project selection and criteria
- Describe about nature of project selection models

Introduction

A project is an allocation of capital and human resources to achieve time-specific objectives. Project management is the procedure and techniques used to achieve project objectives, which includes identifying, prioritising and scheduling tasks to systematically effect rapid change. Many companies are “managing organisations by projects,” using projects as a way to achieve business goals and strategic plans.



3.1 Selection Process of Project

An organisation might have dozens of prospective projects varying for limited resources.

Business Goals

This requires a selection process that maximises the efficiency of scarce business resources. When selecting between prospective projects, assess how each project ties to the organisation's goals and objectives. Base selections on the value each project lends to the organisation's strategic plans. Review the organisation's vision statements, mission statements and business goals against each project's objectives.

Selection Criteria

The process of evaluating individual projects or groups of projects for the purpose of choosing which to implement might include a number of factors. When selecting among competing project alternatives, additional project factors that might be reviewed and compared include costs, benefits and risks. While the exact parameters of these factors might not be known with certainty, estimates can be compared to evaluate differences.

Objectives Matrix

Top management might develop a matrix of objectives for projects that are expressly based on the organisation's business goals and strategies. Examples of objectives include improving the corporate brand with customers, expansion into a new market and growth of market share for a particular product or service, to name a few.

Achievable

A project should be assessed for realism, capability and cost. Thirty percent of all projects end midstream and half of completed projects end an average of 200 percent over schedule and over budget, according to a 2001 study by the Centre for Innovative Management. Unfinished projects are a significant waste of resources. A project that costs more than double its projected budget raises cost-benefit analysis questions.

Project Selection and Criteria

One of the biggest decisions that any organisation 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 organisation decides to take it up.

The most viable option needs to be chosen, keeping in mind the goals and requirements of the organisation. How is it then that you decide whether a project is viable? How to 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 organisation. 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 organisation as well.

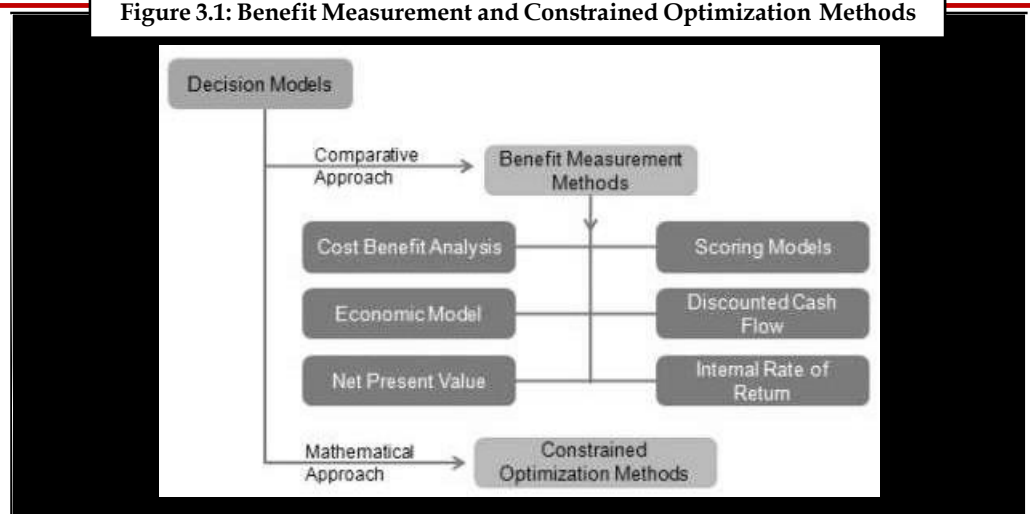
Selection Methods

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

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 Optimisation methods).

Figure 3.1: 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:

1. 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.
2. 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 organisation.
3. 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 optimisation methods require several calculations in order to decide on whether or not a project should be rejected.

Cost-benefit analysis is used by several organisations to assist them to make their selections. Going by this method, you would have to consider all the positive aspects of the project, which is 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 are in the selection process are:

1. Would this decision help me to increase organisational value in the long run?

2. How long will the equipment last for?
3. 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 do decide to go ahead with the project.

Profit optimisation 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 organisation considering a wide range of factors rather than concentrating on just a few. Careful consideration would therefore need to be given to each project.

Nature of Project Selection Models

The Nature of models is as follows:

1. Models turn inputs into outputs
2. Managers decide on the values for the inputs and evaluate the outputs
3. The inputs never fully describe the situation
4. The outputs never fully describe the expected results
5. Models are tools
6. Managers are the decision makers

There are two basic types of project selection models, numeric and non-numeric. Both are widely used. Many organisations use both at the same time, or they use models that are combinations of the two. Non-numeric models, as the name implies, do not use numbers as inputs. Numeric models do, but the criteria being measured may be either objective or subjective. It is important to remember that the qualities of a project may be represented by numbers, and that subjective measures are not necessarily less useful or reliable than objective measures.

Before examining specific kinds of models within the two basic types, let us consider just what we wish the model to do for us, never forgetting two critically important, but often overlooked facts.

- Models do not make decisions – people do. The manager, not the model, bears responsibility for the decision. The manager may “delegate” the task of making the decision to a model, but the responsibility cannot be abdicated.
- All models, however sophisticated, are only partial representations of the reality they are meant to reflect. Reality is far too complex for us to capture more than a small fraction of it in any model. Therefore, no model can yield an optimal decision except within its own, possibly inadequate, framework.

We seek a model to assist us in making project selection decisions. This model should possess the characteristics discussed previously and, above all, it should evaluate potential projects by the degree to which they will meet the firm’s objectives. To construct a selection/evaluation model, therefore, it is necessary to develop a list of the firm’s objectives.

A list of objectives should be generated by the organisation’s top management. It is a direct expression of organisational philosophy and policy. The list should go beyond the typical clichés about “survival” and “maximising profits,” which are certainly real goals but are just as certainly not the only goals of the firm. Other objectives might include maintenance of share of specific markets, development of an improved image with specific clients or competitors, expansion into a new line of business, decrease in sensitivity to business cycles, maintenance of employment for specific categories of workers, and maintenance of system loading at or above some percent of capacity, just to mention a few.

A model of some sort is implied by any conscious decision. The choice between two or more alternative courses of action requires reference to some objective(s), and the choice is thus, made in accord with some, possibly subjective, “model.” Since the development of computers and the establishment of operations research as a subject in the mid-1950s, the use of formal, numeric models to assist in decision making has expanded. Many of these models use financial metrics such as profits and/or cash flow to measure the “correctness” of a managerial decision. Project selection decisions are no exception, being based primarily on the degree to which the financial goals of the organisation are met. As we will see later, this stress on financial goals, largely to the exclusion of other criteria, raises some serious problems for the firm, irrespective of whether the firm is for profit or not-for-profit.

When the list of objectives has been developed, an additional refinement is recommended. The elements in the list should be weighted. Each item is added to the list because it represents a contribution to the success of the organisation, but each item does not make an equal contribution. The weights reflect different degrees of contribution each element makes in accomplishing a set of goals.

Once the list of goals has been developed, one more task remains. The probable contribution of each project to each of the goals should be estimated. A project is selected or rejected because it is predicted to have certain outcomes if implemented.

These outcomes are expected to contribute to goal achievement. If the estimated level of goal achievement is sufficiently large, the project is selected. If not, it is rejected. The relationship between the projects expected results and the organisation's goals must be understood. In general, the kinds of information required to evaluate a project can be listed under production, marketing, financial, personnel, administrative, and other such categories.

Some factors in this list have a one-time impact and some recur. Some are difficult to estimate and may be subject to considerable error. For these, it is helpful to identify a range of uncertainty. In addition, the factors may occur at different times. And some factors may have thresholds,

critical values above or below which we might wish to reject the project. We will deal in more detail with these issues later in this Unit.

Clearly, no single project decision needs to include all these factors. Moreover, not only is the list incomplete, it also contains redundant items. Perhaps more important, the factors are not at the same level of generality: profitability and impact on organisational image both affect the overall organisation, but impact on working conditions is more oriented to the production system. Nor are all elements of equal importance.

Change in production cost is usually considered more important than impact on current suppliers. Shortly, we will consider the problem of generating an acceptable list of factors and measuring their relative importance. At that time we will discuss the creation of a Decision Support System (DSS) for project evaluation and selection.

Although the process of evaluating a potential project is time-consuming and difficult, its importance cannot be overstated. A major consulting firm has argued (Booz, Allen, and Hamilton, 1966) that the primary cause for the failure of Research and Development (R & D) projects is insufficient care in evaluating the proposal before the expenditure of funds. What is true for such projects also appears to be true for other kinds of projects, and it is clear that product development projects are more successful if they incorporate user needs and satisfaction in the design process (Matzler and Hinterhuber, 1998). Careful analysis of a potential project is a sine qua non for profitability in the construction business. There are many horror stories (Meredith, 1981) about firms that undertook projects for the installation of a computer information system without sufficient analysis of the time, cost, and disruption involved.

Later, we will consider the problem of conducting an evaluation under conditions of uncertainty about the outcomes associated with a project. Before dealing with this problem,

however, it helps to examine several different evaluation/selection models and consider their strengths and weaknesses. Recall that the problem of choosing the project selection model itself will also be discussed later.

Did u know? Expert judgement is one of the technique used, in project management to accomplish various tasks, including project selection.

Self Assessment

Fill in the blanks:

- 1..... A project is an allocation of and human resources to achieve time-specific objectives.
- 2..... requires a selection process that maximises the efficiency of scarce business resources.
- 3..... A project should be assessed for , capability and cost.
- 4..... The most option needs to be chosen, keeping in mind the goals and requirements of the organisation.
- 5..... analysis is used by several organisations to assist them to make their selections.
- 6..... There are basic types of project selection models, numeric and non-numeric.
- 7..... The process of a potential project is time-consuming and difficult, its importance cannot be overstated.

A project is selected or rejected because it is predicted to have certain outcomes if

.....

Types of Project Selection Models

Of the two basic types of selection models (numeric and non-numeric), non-numeric models are older and simpler and have only a few subtypes to consider. We examine them first.

Non-Numeric Models

These include the following:

1. ***The Sacred Cow:*** In this case the project is suggested by a senior and powerful official in the organisation. Often the project is initiated with a simple comment such as, “If you have a chance, why don’t you look into . . .,” and there follows an undeveloped idea for a new product, for the development of a new market, for the design and adoption of a global database and information system, or for some other project requiring an investment of the firm’s resources. The immediate result of this bland statement is the creation of a “project” to investigate whatever the boss has suggested. The project is “sacred” in the sense that it will be maintained until successfully concluded, or until the boss, personally, recognises the idea as a failure and terminates it.
2. ***The Operating Necessity:*** If a flood is threatening the plant, a project to build a protective dike does not require much formal evaluation, which is an example of this scenario. XYZ Steel Corporation has used this criterion (and the following criterion also) in evaluating potential projects. If the project is required in order to keep the system operating, the primary question becomes: Is the system worth saving at the estimated cost of the project? If the answer is yes, project costs will be examined to make sure they are kept as low as is consistent with project success, but the project will be funded.
3. ***The Competitive Necessity:*** Using this criterion, XYZ Steel undertook a major plant rebuilding project in the late 1960s in its steel bar manufacturing facilities near Chicago. It had become apparent to XYZ’s management that the company’s bar mill needed modernisation if the firm was to maintain its competitive position in the Chicago market area. Although the planning process for the project was quite sophisticated, the decision to undertake the project was based on a desire to maintain the company’s competitive position in that market. In a similar manner, many business schools are restructuring their undergraduate and Masters in Business Administration (MBA) programs to stay competitive with the more forward looking schools. In large part, this action is driven by declining numbers of tuition paying students and the need to develop stronger programs to attract them.

Investment in an operating necessity project takes precedence over a competitive necessity project, but both types of projects may bypass the more careful numeric analysis used for projects deemed to be less urgent or less important to the survival of the firm.

4. **The Product Line Extension:** In this case, a project to develop and distribute new products would be judged on the degree to which it fits the firm's existing product line, fills a gap, strengthens a weak link, or extends the line in a new, desirable direction. Sometimes careful calculations of profitability are not required. Decision makers can act on their beliefs about what will be the likely impact on the total system performance if the new product is added to the line.

5. **Comparative Benefit Model:** For this situation, assume that an organisation has many projects to consider, perhaps several dozen. Senior management would like to select a subset of the projects that would most benefit the firm, but the projects do not seem to be easily comparable. For example, some projects concern potential new products, some concern changes in production methods, others concern computerisation of certain records, and still others cover a variety of subjects not easily categorised (e.g., a proposal to create a daycare center for employees with small children).

The organisation has no formal method of selecting projects, but members of the selection committee think that some projects will benefit the firm more than others, even if they have no precise way to define or measure "benefit."

The concept of comparative benefits, if not a formal model, is widely adopted for selection decisions on all sorts of projects. Most United Way organisations use the concept to make decisions about which of several social programs to fund. Senior management of the funding organisation then examines all projects with positive recommendations and attempts to construct a portfolio that best fits the organisation's aims and its budget.

Numeric Models

As noted earlier, a large majority of all firms using project evaluation and selection models use profitability as the sole measure of acceptability. We will consider these models first, and then discuss models that surpass the profit test for acceptance. These include the following:

1. **Payback Period:** The payback period for a project is the initial fixed investment in the project divided by the estimated annual net cash inflows from the project. The ratio of these quantities is the number of years required for the project to repay its initial fixed investment. For example, assume a project costs \$100,000 to implement and has annual net cash inflows of \$25,000. Then

$$\text{Payback period} = \$ 100,000 / \$ 25,000 = 4 \text{ years}$$

This method assumes that the cash inflows will persist at least long enough to pay back the investment, and it ignores any cash inflows beyond the payback period. The method also serves as an (inadequate) proxy for risk. The faster the investment is recovered, the less the risk to which the firm is exposed.

2Average Rate of Return: Often mistaken as the reciprocal of the payback period, the average rate of return is the ratio of the average annual profit (either before or after taxes) to the initial or average investment in the project. Because average annual profits are usually not equivalent to net cash inflows, the average rate of return does not usually equal the reciprocal of the payback period. Assume, in the example just given, that the average annual profits are \$15,000.

Neither of these evaluation method is recommended for project selection, though payback period is widely used and does have a legitimate value for cash budgeting decisions. The major advantage of these models is their simplicity, but neither takes into account the time-

value of money. Unless interest rates are extremely low and the rate of inflation is nil, the failure to reduce future cash flows or profits to their present value will result in serious evaluation errors.

3Discounted Cash Flow: Also referred to as the Net Present Value (NPV) method, the discounted cash flow method determines the net present value of all cash flows by discounting them by the required rate of return (also known as the hurdle rate, cutoff rate, and similar terms) as follows:

To include the impact of inflation (or deflation) where p_t is the predicted rate of inflation during period t , we have Early in the life of a project, net cash flow is likely to be negative, the major outflow being the initial investment in the project, A_0 . If the project is successful,

however, cash flows will become positive. The project is acceptable if the sum of the net present values of all estimated cash flows over the life of the project is positive. A simple example will suffice. Using our \$100,000 investment with a net cash inflow of \$25,000 per year for a period of eight years, a required rate of return of 15 percent, and an inflation rate of 3 percent per year, we have.

Because the present value of the inflows is greater than the present value of the outflow — that is, the net present value is positive — the project is deemed acceptable.

Example: PsychoCeramic Sciences, Inc. (PSI), a large producer of cracked pots and other cracked items, is considering the installation of a new marketing software package that will, it is hoped, allow more accurate sales information concerning the inventory, sales, and

deliveries of its pots as well as its vases designed to hold artificial flowers.

The Information Systems (IS) department has submitted a project proposal that estimates the investment requirements as follows: an initial investment of \$125,000 to be paid up- front to the Pottery Software.

Corporation, an additional investment of \$100,000 to modify and install the software; and another \$90,000 to integrate the new software into the overall information system. Delivery and installation is estimated to take one year; integrating the entire system should require an additional year.

Thereafter, the IS department predicts that scheduled software updates will require further expenditures of about \$15,000 every second year, beginning in the fourth year. They will not, however, update the software in the last year of its expected useful life.

The project schedule calls for benefits to begin in the third year, and to be upto a particular speed by the end of that year. Projected additional profits resulting from better and more timely sales information are estimated to be \$50,000 in the first year of operation and are expected to peak at \$120,000 in the second year of operation.

Project life is expected to be 10 years from project inception, at which time the proposed

system will be obsolete for this division and will have to be replaced. It is estimated, however, that the software can be sold to a smaller division of PsychoCeramic Sciences, Inc. (PSI) and will thus, have a salvage value of \$35,000. The Company has a 12 percent hurdle rate for capital investments and expects the rate of inflation to be about 3 percent over the life of the project. Assuming that the initial expenditure occurs at the beginning of the year and that all other receipts and expenditures occur as lump sums at the end of the year, we can prepare the Net Present Value analysis for the project.

The Net Present Value of the project is positive and, thus, the project can be accepted. (The project would have been rejected if the hurdle rate were 14 percent.) Just for the intellectual exercise, note that the total inflow for the project is \$759,000, or \$75,900 per year on average for the 10 year project. The required investment is \$315,000 (ignoring the biennial overhaul charges). Assuming 10 year, straight line depreciation, or \$31,500 per year, the payback period would be: A project with this payback period would probably be considered quite desirable.

4. **Internal Rate of Return (IRR):** If we have a set of expected cash inflows and cash outflows, the internal rate of return is the discount rate that equates the present values of the two sets of flows. If A_t is an expected cash outflow in the period t and R_t is the expected inflow for the period t , the internal rate of return is the value of k that satisfies the following equation (note that the A_0 will be positive in this formulation of the problem). The value of k is found by trial and error.

5. **Profitability Index:** Also known as the benefit-cost ratio, the profitability index is the net present value of all future expected cash flows divided by the initial cash investment. (Some firms do not discount the cash flows in making this calculation.) If this ratio is greater than 1.0, the project may be accepted.

6. **Other Profitability Models:** There are a great many variations of the models just described. These variations fall into three general categories. These are:

- (a) Those that subdivide net cash flow into the elements that comprises the net flow.
- (b) Those that include specific terms to introduce risk (or uncertainty, which is treated as risk) into the evaluation.
- (c) Those that extend the analysis to consider effects that the project might have on other projects or activities in the organization.

Caution Senior management would like to select a subset of the projects that would most benefit the firm, but the projects do not seem to be easily comparable.

Analysis under Certainty

Certainty Assumption

1. Certainty means that although future flows must be forecast or estimated, the estimated amounts will be received at the times they are expected to occur.
2. Certainty makes the decision simple to model, and the outcome easy to accept.
3. Under the assumption of certainty, future cash flows are to be discounted at a rate which represents the time value of money.

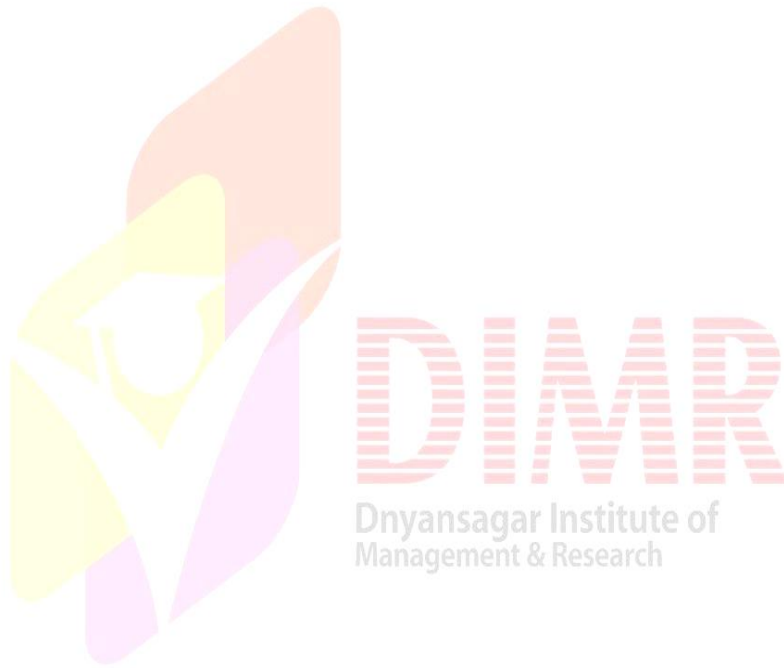
Example: Project Alpha requires an initial outlay of \$900, will have cash inflows of \$300 in year 1, \$400 in year 2 and \$600 in year 3. The discount rate is 8% per annum. The calculation is:

$$\begin{aligned} \text{NPV} &= -900 + \frac{300}{(1.08)^1} + \frac{400}{(1.08)^2} + \frac{600}{(1.08)^3} \\ &= \$197.01 \end{aligned}$$

This positive result means that, by undertaking the project, the firm's wealth will increase by \$197.01. Based on the NPV decision rule, the project should be undertaken.

We have made several assumptions in formulating and using this NPV model and decision:

1. the amounts of the initial cash outflow and all future cash flows are known with certainty
2. the discount rate is constant and known with certainty
3. the initial capital outlay occurs at the beginning of year 1 and all operating cash flows occur at year end
4. cash outflows from the firm are treated as negative; cash inflows are treated as positive
5. there are no constraints on the supply of capital, or on other resources
6. the firm will accept all positive NPV projects.



Self Assessment

State True or False:

9. The organisation has no informal method of selecting projects.
10. The concept of comparative benefits, if not a formal model, is widely adopted for selection decisions on all sorts of projects.
11. Decision makers can act on their beliefs about what will be the likely impact on the total system performance if the new product is added to the line.
12. Capital in an operating necessity project takes precedence over a competitive necessity project.

Summary

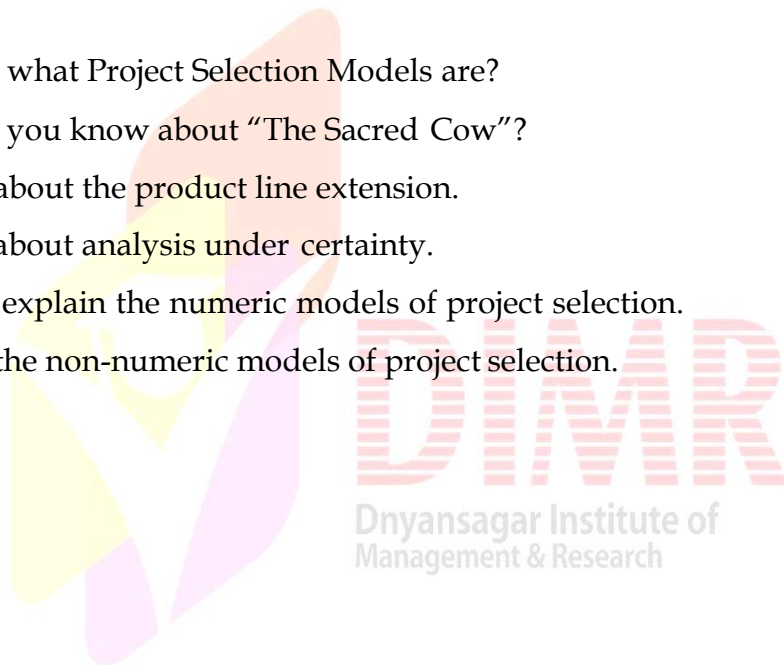
- An organisation might have dozens of prospective projects vying for limited resources.
- The process of evaluating individual projects or groups of projects for the purpose of choosing which to implement might include a number of factors.
- Top management might develop a matrix of objectives for projects that are expressly based on the organisation's business goals and strategies.
- A project should be assessed for realism, capability and cost.
- One of the biggest decisions that any organisation would have to make is related to the projects they would undertake.
- The most viable option needs to be chosen, keeping in mind the goals and requirements of the organisation.
- There are various project selection methods practiced by the modern business organisations.
- Cost-benefit analysis is used by several organisations to assist them to make their selections.
- In this case the project is suggested by a senior and powerful official in the organisation.
- Certainty means that although future flows must be forecast or estimated, the estimated amounts will be received at the times they are expected to occur.

Product Line Extension: In this case, a project to develop and distribute new products would be judged on the degree to which it fits the firm's existing product line, fills a gap, strengthens a weak link, or extends the line in a new, desirable direction.

Profitability Index: It is the net present value of all future expected cash flows divided by the initial cash investment.

3.2 Review Questions

1. Describe about strategic management and project selection.
2. Explain about project selection and criteria.
3. Which method is a better model: discounted cash flow model or IRR? Explain, why?
4. Describe what Project Selection Models are?
5. What do you know about "The Sacred Cow"?
6. Explain about the product line extension.
7. Discuss about analysis under certainty.
8. List and explain the numeric models of project selection.
9. Explain the non-numeric models of project selection.





Case Study **Green Projects**

we discussed the effect that the current economy is having on projects and project management in an article entitled “Project Management in Tight Times.” In that article we made the case that although some projects are being put on hold, others are going forward with increased scrutiny.

Projects that are environmentally “friendly” by virtue of their ability to reduce pollution, reduce fossil fuel consumption, or some other positive effect on the environment are definitely among those projects that are going forward. So project managers should increase their focus and awareness on these areas. These projects have spawned a new vocabulary. Terms such as “Green Project” and “Green Collar Jobs” are examples. Project managers should be aware of this shift in focus and add some of the new terms to their resumes to attract interest. Project management on these projects may demand a slightly different skill

set than on other types of projects though.

Tyler Hamilton, reporting in the Friday, June 19, 2009 edition of the Toronto Star says that developers of large scale solar farms in Ontario, Canada, are preparing to battle the provincial government over its restrictions on where solar farms can be placed. Solar farms are vast areas of solar panels which supply electricity to a power grid. Solar power companies either lease or buy existing farms to install the panels. The ideal place for these farms is as close to the power grid as possible. That placement will reduce the length of transmission lines and reduce the cost of the project. The problem with that strategy is that government agriculture policy states that farms with class 1, 2, or 3 soils (soils are rated on a scale with 1 being the highest fertility) are not suitable for purposes other than agriculture. Averting any farmland that falls into class 1, 2, and 3 would potentially add considerable cost to any solar farm project.

Solar farm projects are attractive because they fall into the “green” class of project because they reduce dependency on electricity generated by plants that use fossil fuels. Solar farm projects are obviously also attractive to the solar power companies that initiate them because of their ability to generate profit. The increase in infrastructure costs that the additional transmission lines would have could potentially reduce the profit to the point that they would incur a loss with a project because their electricity prices must be competitive with existing sources.

According to Tyler Hamilton’s article in the Star, Ontario’s Energy and Infrastructure Minister George Smitherman said that rules expected to result from Green Energy and Green Economy Act would put restrictions on where solar farms could be placed. He said that farms with class 1, 2, or 3 soil would not qualify for development (including solar farms) in

Ontario. Smitherman believes that there is enough farm land available that doesn't fall into class 1, 2, or 3 and that solar farms should not compete for the more fertile farm land. Some advocacy groups backed by the Ontario Federation of Agriculture for Environment Law and Policy are solidly behind this government policy.

The Canadian Solar Industries Association is fighting the policy with its own public relations campaign on several fronts. They say that they would only be consuming class 1, 2, or 3 farmland at the rate of 0.11% over 20 years. The Association also claims that without the ability to lease or buy this farmland they would be unable to initiate the large projects which would bring manufacturers of solar panels and other related industries to the

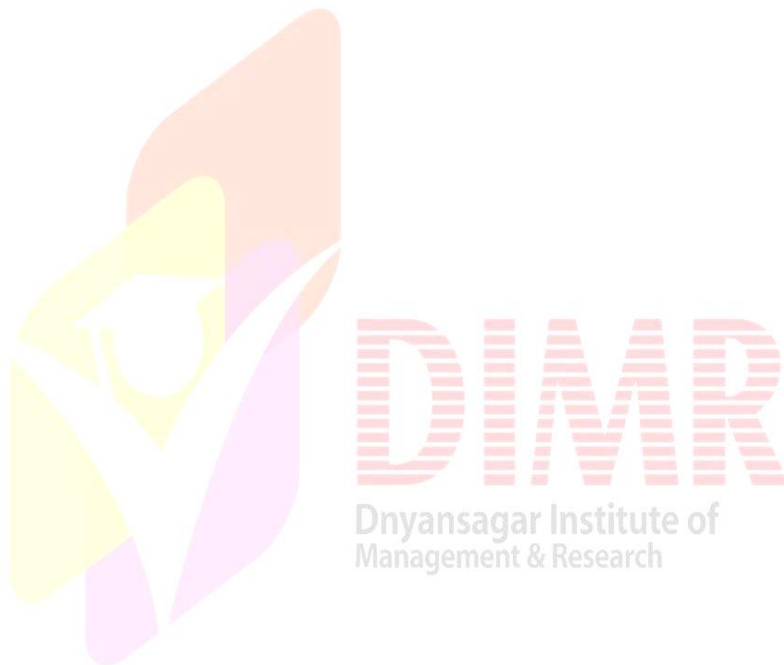
province. These industries would bring what are termed "green collar" jobs to the province, an especially appealing prospect in a province bleeding manufacturing jobs.

The Association claims that using the farms for solar use will not harm the fertile farmland. The farms will guard against soil erosion because of the cover the panels provide. Allowing the land to lay fallow while being used for solar farms would also provide an opportunity for nutrients to build up in the soil making it even more fertile if it were to be returned to agricultural usage.

The reporter spoke with a farmer, Ray Roth of New Hamburg, Ontario, Canada who is a farmer trying to develop solar farms. Mr. Roth pointed out that it would be contradictory for the province to implement restrictions on the solar farms because it already provides indirect subsidies to farmers who grow corn and other crops used for ethanol production. The corn and other crops must be trucked to a plant which consumes fossil fuels, so replacing a corn farm with a solar farm would reduce fossil fuel consumption because the power would go directly on the grid.

Projects are always influenced by stakeholders who are not customers, clients, sponsors, or members of the project team. They may not all be as influential as the government is in this case, but must have their considerations taken into account in any case. The higher the public profile of a project, the greater the number of public interest groups that will take an interest in the outcome. The ideal time to identify these stakeholders is at the outset of the project. Demonstrating the value of a "green project" to these stakeholders becomes much easier when the groups are consulted with during initiation. The project manager must take ownership of this effort, identify the interest groups, and engage them early on in the project. Look for ways to demonstrate the benefit of the project to the public, paying special attention to the interests representing by the group in question. Associations or organisations may be available to manage these issues. Where these don't exist, the sponsor or project manager may need to engage the services of a public relations firm to state the benefits of their project.

The benefits of the solar farms for the provinces economy (“green collar” jobs) has been demonstrated by the Canadian Solar Industries Association. They have also demonstrated the benefit to the environment, a reduction in fossil fuel consumption to produce electricity. The problem they face is the backlash from farming groups who aren’t directly affected by the demand for farmland for solar farms. These groups don’t directly benefit from either of the two benefits stated above, and above all won’t benefit financially from the sale or leasing of their farms for the purpose of building solar farms. But they do vote, a fact that George Smitherman won’t miss. The Association faces a challenge from the government before it can hope to get the farmland it wants and it will have to influence the government to change their position on solar farms. Perhaps the best way of doing this would be to provide a benefit to the farm groups backing the government’s position.



Unit 4: Project Analysis and Selection

Objectives

After studying this unit, you will be able to:

- Know about project initiation and resource allocation
- Understand market analysis and demand analysis
- Know about the technical analysis

Introduction

A project should earn sufficient return on the investment. The very idea of promoting a project by an entrepreneur is to earn attractive returns on investment on the project. Projects sponsored/ undertaken by Government may take into account social cost benefits of the proposed project and in such cases, financial return alone needs not be the criterion. But for such Government projects, all other projects have the prime motive of getting maximum return on investment. If there are many alternative projects, all of which, *prima facie*, appear to be more or less equal in profit earning capacity, the investor should make a comparative study of the return on the different alternative proposals before choosing one.

Project Initiation and Resource Allocation

The purpose of Project Initiation is to begin to define the overall parameters of a project and establish the appropriate project management and quality environment required to complete the project.

Development of the Project Charter is a pivotal starting point for the project, establishing the project definition that will serve as the foundation for all future efforts. The completion of this process is marked by the Project Kick-off Meeting, in which the Project Manager presents the Project Charter.

Successful projects begin with a detailed project definition that is understood and accepted by Stakeholders. Putting everything down in writing helps ensure a commitment among Project Team members and between the team and the Stakeholders. As part of Project Initiation, an initial Project Plan is developed, which comprises the Project Charter, Cost/Scope/Schedule/ Quality (CSSQ) documents, and preliminary risk identification list. These documents, once approved, ensure a consistent understanding of the project, help to set expectations, and identify resources necessary to move the project to the next level of detailed planning. Potential problems are identified so that they can be addressed early in

the project.

Also during Project Initiation, a high-level Project Schedule is developed as the roadmap to more detailed Project Planning and Project Execution and Control. This high-level schedule will be refined over time, and will serve as the primary source of information regarding project status and progress. An accurate, realistic, and complete schedule, rigorously maintained, is essential to the success of a project.

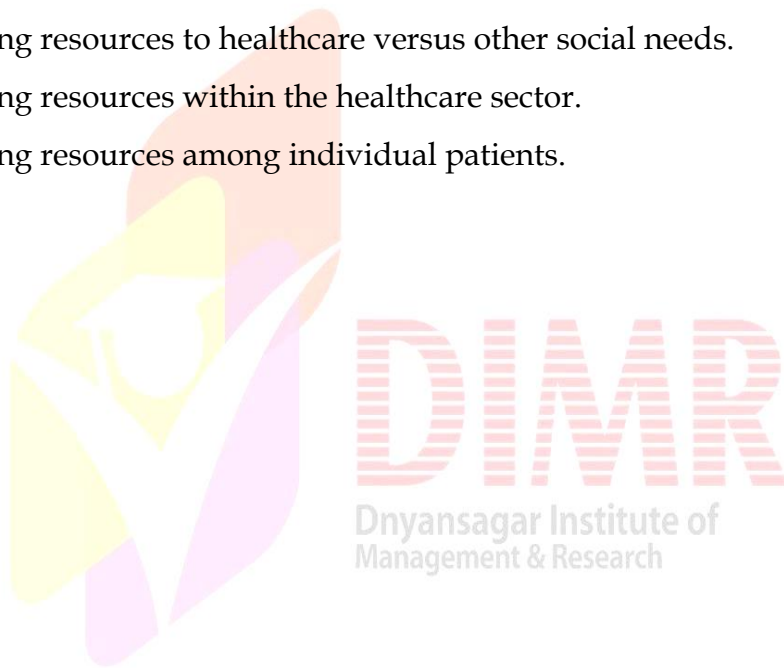
Resource Allocation

Resource allocation is the distribution of resources – usually financial - among competing groups of people or programs. When we talk about allocation of funds for healthcare, we need to consider three distinct levels of decision-making:

Level 1: Allocating resources to healthcare versus other social needs.

Level 2: Allocating resources within the healthcare sector.

Level 3: Allocating resources among individual patients.



Example: A community receives a gift of \$100,000 from a wealthy donor to spend on healthcare, education and housing. The funds can be distributed among the three areas or dedicated to a single area, such as healthcare.

Level 1: At this level, community members consider how to distribute the funds among one, two or three of the competing programs.

Example: For example, should the funding be split in three equal portions or should one program, possibly under-funded in the past, get all or most of the money?

Level 2: Assuming that healthcare gets a portion of the \$100,000, the next decision community members face is how best to direct the spending among competing healthcare interests. Should most or all of the funds go to hospital care and medical equipment? What about the public education program that promotes healthy lifestyles and behaviors (like exercise or immunizations) that prevent disease? Or, community members could decide to spend the money to purchase health insurance for those who can't afford it.

Level 3: The next level of decision making involves distributing the financial resources among individuals. Most communities have policies and guidelines to insure fairness in these situations. Decisions at this level include: Who gets the next available heart for transplant? And, who sees the doctor first when there are many people waiting in an emergency room?

Did u know? The wants and needs of a project or business are unlimited but the resources to satisfy these wants are limited. Thus, resource allocation is a mandatory activity.

Why is Resource Allocation Needed?

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Because of increasing demand for healthcare services and rising costs to provide those services, Americans must choose how to allocate healthcare dollars.

Rising Cost of Healthcare

Resources spent on healthcare have increased over the last century. Americans are spending far more resources on healthcare than do citizens of any other industrialized nation. Why?

1. Continued medical advances have lead to more accurate diagnoses and better treatments, but also have increased the cost of healthcare.
2. The aging population is growing. Nearly 36 million Americans (more than the entire population of Canada) are age 65 or older and account for a majority of healthcare expenditures.
3. More people are living with chronic disease and disabilities, including AIDS.

Healthcare Rationing

Rationing refers to the conscious decision to exclude certain people from a service or treatment that they need. Rationing takes many forms. Rationing occurs when a state determines who is eligible for Medical Assistance insurance. It also occurs when deciding which patient on the waiting list gets an organ transplant. Rationing is also utilized when prices are set for health insurance and health services that some people cannot afford.

Oregon Health Plan

Oregon has implemented an innovative health plan that rations health care by developing a prioritized list of treatments. A cut off line is then set to determine which services would be covered and which would not. The plan serves to increase access to health care for more Oregon residents but cuts down on the range of services covered.

This plan allows Oregon to provide health care access to a greater percentage of its residents, but it raises a number of ethical considerations. If ranking health care services is based on improving quality of life rather than medical or biological outcomes, how do we evaluate quality of life? Is it ethical to refuse to medical care based on cost-effective rankings? Does the method of ranking by quality of life discriminate against people with disabilities?

Caution Successful projects begin with a detailed project definition that is understood and accepted by Stakeholders.

Market Analysis and Demand Analysis

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Forecast vs. Prediction: Forecast is an estimate of future events and trends and is arrived at by systematically combining past data and projecting it forward in a predetermined manner. Prediction is an estimate of future events and trends in a subjective manner without taking into account the past data. The subjective considerations may not emerge from any predetermined analysis or approach.

Time Horizon of Demand Forecasting: Market and demand analysis of various types are undertaken to meet specific requirements of planning and decision making.



Example: Short-term decisions in production planning, distribution etc. and selling individual products would require short-term forecast, up to one year time horizon, which must be fairly accurate for specific product items. For long-term planning, time horizon being four to five years, information required from demand analysis would be for broad product groups for facilitating choice of technology, machine tools and other hardwares and their location.

Longer-term forecasting is also undertaken to determine trends in technology development so as to choose the technology for backing up and funding its research and development.

Need for Demand Forecasting

All business planning starts with forecasting Capital investment, like procurement of raw materials and production planning, has to relate to demand forecasting. High volume high technology mass production systems have further highlighted the importance of accurate demand forecasts. Even in a batch type production, any major mismatch between forecast and manufacture will lead to higher capital tied up in finished products which are slow in selling.

Uncertainties in Demand Forecasting

Demand forecasting is the estimate of future demand. As the future is always uncertain, forecasting cannot be completely fool proof and correct. However, the very process of forecasting demand in future involves evaluating various forces and factors which influence demand. This exercise is very rewarding in itself as it enables the personnel to know about various market forces, currents, cross-currents and under-currents relevant to the demand behavior.

Levels of Demand Forecasting

Demand forecasting can be at the level of a firm or an industry or at the national or national or international level:

1.Firm Level: If the exercise aims at forecasting demand of firms products locally at state, region or national level, it is a micro-level of demand forecasting. Sometimes, forecasts are required for company products in specific industry or market segment.

2Industry Level: Such a demand forecasting exercise focuses on an industry as a whole for the region and/or national level. These forecasts may be undertaken by a group of companies or by industry/trade associations.

3.National Level: Demand forecasts at national level include parameters like national income, expenditure, index of industrial and/or agricultural production etc. Estimating aggregate demand of products at national level facilitates governmental decisions for imports, exports, pricing policy, etc.

4International Level: Companies operating in multinational markets would require similar forecasting of demands for its products, trends in consumption, etc. at international level Managerial Economists play a leading role in masterminding these forecasts at firm, industry, national and international levels. Time horizon of these demand forecasts usually varies from 1 to 5 years and in rare instances up to 10 years.

Did u know? Demand forecasting is the activity of estimating the quantity of a product or

service that consumers will purchase. Demand forecasting may be used in making pricing decisions.

Self Assessment

Fill in the blanks:

- 1.....is also utilized when prices are set for health insurance and health services that some people cannot afford.
- 2.....is also undertaken to determine trends in technology development so as to choose the technology for backing up and funding its research and development.
- 3.Rationing occurs when a state determines who is eligible for Assistance insurance.
- 4..... and demand analysis of various types are undertaken to meet specific requirements of planning and decision making.
exercise should not be expensive in terms of efforts and costs.

Criteria for a Good Forecasting Method

A good forecasting method should have the following attributes:

1.*Accuracy in forecast:* Accuracy in forecast is measured in terms of past forecasts against current sales and by the percentage of deviation from actual demand. It is important to not only check the accuracy of past forecasts but also the validity of assumptions in practice. Forecasts being future-oriented, cannot be always accurate although accuracy is the most important criterion.

2. *Plausibility of forecasts:* Forecasts of demand must be reasonable, consistent and plausible. Assumptions made should stand scrutiny and techniques adopted must be commensurate. Explanatory note on these aspects must be available in the write-up on methods and methodology employed in forecasting.

3. *Economy of forecasts:* Forecasting exercise should not be expensive in terms of efforts and costs. Additional costs of ways and means for improving the accuracy of forecasts should not exceed the extra gain expected.

4. *Quick Results:* Method of forecasting chosen should be capable of yielding quick and useful results, If method selected takes far too long a time to yield accurate forecast, it may not be conducive for taking quick and effective decisions. Always remember not to make best enemy of 'good'.

5. *Availability and Timeliness:* Methodology of forecasting should be

such that it can easily be updated when changes occur in the demand relationships.

6. **Durability:** Demand forecasts should not be changed frequently. Durability of forecast is subject to the followings:

- (a) Simple and reasonable relationship between price and demand, advertisement and sales, level of income and volume of sales etc.
- (b) Stability of relationship between the above variables.

7. **Flexibility:** Flexibility of forecast is an added advantage. It is desirable to be able to adjust 'coefficient' of variables from time to time to cope with the changing conditions.

4.1.1 Methods of Forecasting Demand

To facilitate proper and reliable appraisal of investment proposal, we require a reasonably accurate forecast of demand. Starting with qualitative methods like survey of collective opinions, buyers' intention, Delphi approach and its variant, a number of quantitative methods are used for compiling and computing demand forecasts as detailed below:

1. **Collective Opinion Survey:** Sales personnel are closest to the customers and have an intimate feel of the market. Thus they are most suited to assess consumers' reaction to company's products. Herein each salesperson makes an estimate of the expected sales in their respective area, territory, state and/or region. These estimates are collated, reviewed and revised to take into account changes in design/features of products, changes in selling prices, projected advertising and sales promotion campaigns and anticipated changes in competitors: marketing policies covering product, people, price, promotion and place. Opinions of all managers involved at various levels of sales organisation are also included in the survey. Thus "collective opinion survey forms the basis of market analysis and demand forecasting.

Although this method is simple, direct, first hand and most acceptable, it suffers from following weaknesses:

- (a) Estimates are based on personal judgment which may not be free from bias.
- (b) Adding together demand estimates of individual salespersons to obtain total demand of the country maybe risky as each person has knowledge about a small portion of market only
- (c) Salesperson may not prepare the demand estimates with the requisite seriousness and care
- (d) Owing to limited experience, usually in their employment, salesperson may not have the requisite knowledge and experience

This method may be useful for long-term forecasts. It is also used for new products or new

variants of existing products.

2. Survey of Customers Intention: Another method of demand forecasting is to carry out a survey of what consumers prefer and intend to buy. If the product is sold to a few large industrial buyers, survey would involve interviewing them. If it is a consumer durable product, a sample survey is carried out for questioning a few representative consumers about what they are planning or intending to buy. It is neither realistic nor desirable to query all consumers either through direct contact or through printed questionnaire by mail.

These surveys serve useful purpose in establishing relationships between:

- (a) demand and price
- (b) demand and income of consumers
- (c) demand and expenditure on advertisement etc.

This method is preferred when bulk of the sales is to institutions and industrial buyers and only a few of them have to be contacted.

Disadvantages are that customers may not know total requirements; in some cases they are not certain about quantity to be purchased. Besides during shortages there is a tendency to inflate their requirements. Survey method is not useful for households - interviewing them is not only difficult but also expensive. They are not able to give precise idea about their intentions particularly when alternative products are available in the market.

3. Delphi Method of Demand Forecasting: Delphi method is a group process and aims at achieving a consensus of the members. Herein experts in the field of marketing research and demand forecasting are engaged in analyzing economic conditions carrying out sample surveys of market conducting opinion polls.

Based on the above, demand forecast is worked out in following steps:

- (a) Coordinator sends out a set of questions in writing to all the experts co-opted on the panel who are requested to write back a brief prediction.
- (b) Written predictions of experts are collated, edited and summarized together by the Coordinator.
- (c) Based on the summary, Coordinator designs a new set of questions and gives them to the same experts who answer back again in writing.
- (d) Coordinator repeats the process of collating, editing and summarizing the responses.
- (e) Steps 3 and 4 are repeated by the Coordinator to experts with diverse backgrounds until consensus is reached.

If there is divergence of opinions and hence conclusions, Coordinator has to sort it out through mutual discussions. Coordinator has to have the necessary experience and background as he plays a key role in designing structured questionnaires and synthesizing the data.

Direct interaction among experts is avoided nor their identify is disclosed. Procedure also avoids inter-personnel conflicts nor strong-willed experts are able to dominate the group. This method is also used for technology forecasting.

Self Assessment

State True or False:

6. Indirect interaction among experts is avoided nor their identify is disclosed.
7. Delphi method is a group process and aims at achieving a consensus of the members.
8. Coordinator repeats the process of collating, editing and summarizing the responses.
9. Forecasts of supply must be reasonable, inconsistent and plausible.
10. Sales personnel are closest to the customers and have an intimate feel of the market.

Technical Analysis

For manufacturing a product/service often two or more alternative technologies are available. For example:

1. Steel can be made either by the Bessemer process or the open hearth process.
2. Cement can be made either by the dry process or the wet process.
3. Soda can be made by the electrolysis method or the chemical method.
4. Paper, using bagasse as the raw material, can be manufactured by the Kraft process or the soda process or the Simon Cusi process.
5. Vinyl chloride can be manufactured by using one of the following reactions: acetylene on hydrochloric acid or ethylene on chlorine.
6. Soap can be manufactured by the semi-boiled process or the fully boiled process.

Choice of Technology

The choice of technology is influenced by a variety of considerations. These are explained below:

1. **Plant Capacity:** Often, there is a close relationship between plant capacity and production technology. To meet a given capacity requirement perhaps only a certain production technology may be viable.

2. **Principal Inputs:** The choice of technology depends on the principal inputs available for the project. In some cases, the raw materials available influence the technology chosen.



Example: The quality of milestones determines whether the wet or dry process should be used for a cement plant.

3. **Investment Outlay and Production Cost:** The effect of alternative technologies on investment outlay and production cost over a period of time should be carefully assessed.

4. **Use by Other Units:** The technology adopted must be proven by successful use by other units, preferably in India.

5. **Product Mix:** The technology chosen must be judged in terms of the total product mix generated by it, including saleable by products.

6. **Latest Developments:** The technology adopted must be based on the latest developments in order to ensure that the likelihood of technological obsolescence in the near future, at least, is minimised.

7. **Ease of Absorption:** The ease with which a particular technology can be absorbed can influence the choice of technology. Sometimes a high-level technology may be beyond the absorptive capacity of a developing country which may lack trained personnel to handle that technology.

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4.1.2 Appropriateness of Technology

Appropriate technology refers to those methods of production which are suitable to local economic, social, and cultural conditions. In recent years, the debate about appropriate technology has been sparked off mainly by Schumacher and others. The advocates of appropriate technology urge that the technology should be evaluated in terms of the following questions:

1. Whether the technology utilises local raw materials?
2. Whether the technology utilises local man power?
3. Whether the goods and services produced cater to the basic needs?
4. Whether the technology protects ecological balance?
5. Whether the technology is harmonious with social and cultural conditions?

4.1.3 Technical Arrangements

Satisfactory arrangements must be made to obtain the technical know how needed for the proposed manufacturing process. When collaboration is sought, inter alia, the following aspects of the agreement must be worked out in detail:

- 1.The nature of support to be provided by the collaborators during the designing of the project, selection and procurement of equipment, installation and erection of the plant, operation and maintenance of the plant, and training of the project personnel.
- 2.Process and performance guarantees in terms of plant capacity, product quality, and consumption of raw materials and utilities.
- 3.The price of technology in terms of one time licensing fee and periodic royalty fee.
- 4.The continuing benefit of research and development work being done by the collaborator.
- 5.The period of the collaboration agreement.
- 6.The assistance to be provided and the restrictions to be imposed by the collaborator with respect to exports.
- 7.The level of equity participation and the manner of sharing management control, especially if the technical collaboration is backed by financial collaboration.
- 8.Assignment of the agreement by either side in case of change of ownership.
- 9.Termination of the agreement or other remedies when either party fails to meet its obligation.
10. Approach to be adopted in *force majeure* situations.

Material Inputs and Utilities

An important aspect of technical analysis is concerned with defining the materials and utilities required, specifying their properties in some detail, and setting up their supply programme. There is an intimate relationship between the study of materials and utilities and other aspects of project formulation, particularly those concerned with location, technology, and equipments.

Material inputs and utilities may be classified into four broad categories: (i) raw materials,

(ii) processed industrial materials and components, (iii) auxiliary materials and factory supplies, and (iv) utilities.

Raw Materials

Raw materials (processed and/or semi processed) may be classified into four types:

(i) agricultural products, (ii) mineral products, (iii) livestock and forest products, and (iv) marine products. These are explained below:

1. ***Agricultural Products:*** In studying agricultural products, the quality must first be examined. Then, an assessment of the quantities available, currently and potentially, is required. The questions that may be raised in this context are: What is the present marketable surplus? What is the present area under cultivation? What is the likely increase in yield per acre?
2. ***Mineral Products:*** In assessing mineral raw materials, information is required on the quantum of exploitable deposits and the properties of the raw materials. The study should provide details of the location, size, and depth of the deposits and the viability of open cast or underground mining. In addition, information should be generated on the composition of the ore, level of impurities, need for beneficiation, and physical, chemical and other properties.
3. ***Livestock and Forest Products:*** Secondary sources of data on livestock and forest products often do not provide a dependable basis for estimation. Hence, in general, a specific survey may be required to obtain more reliable data on the quantum of livestock produce and forest products.
4. ***Marine Products:*** Assessing the potential availability of marine products and the cost of collection is somewhat difficult. Preliminary marine operations, essential for this purpose, have to be provided for in the feasibility study.

Processed Industrial Materials and Components

Processed industrial materials and components (base metals, semi processed materials, manufactured parts, components, and sub-assemblies) represent important inputs for a number of industries. In studying them the following questions need to be answered: In the case of industrial materials, what are their properties? What is the total requirement of the project? What quantity would be available from domestic sources? What quantity can be procured from foreign sources? How dependable are the supplies? What has been the past trend in prices? What is the likely future behaviour of prices?

Auxiliary Materials and Factory Supplies

In addition to the basic raw materials and processed industrial materials and components, a manufacturing project requires various auxiliary materials and factory supplies like chemicals, additives, packaging materials, paint, varnishes, oils, grease, cleaning materials, etc. The requirements of such auxiliary materials and supplies should be taken into account in the feasibility study.

Utilities

A broad assessment of utilities (power, water, steam, fuel, etc.) may be made at the time of the input study though a detailed assessment can be made only after formulating the project with respect to location, technology, and plant capacity. Since the successful operation of a

project critically depends on the adequate availability of utilities, the following questions should be raised while conducting the inputs study. What quantities are required? What are the sources of supply? What would be the potential availability? What are the likely shortages/bottlenecks? What measures may be taken to augment supplies?

Did u know? Experts of marine products have been erratic and on a declining trend which can be owed to the adverse market conditions in the EV and US markets.

Basis of Government Regulatory Framework

Government of India recognizes that there are significant shortcomings in the availability of critical infrastructure in the country at central as well as state and local level and that this is hindering rapid economic development. In addition, the development of infrastructure requires very large investment that may not be possible out of the budgetary resources of government of India alone. In order to remove these shortcomings and to bring in private sector resource as well as techno-managerial efficiencies, the government is committed to promoting Public Private Partnerships (PPPs) in infrastructure development.

It is also recognized that infrastructure projects have a long gestation period and may not all be fully financially viable on their own. On the other hand, financial viability can often be fully financially viable on mechanism that provides government support to reduce project costs. The government of India therefore proposes to set up a special facility to provide such support to PPP projects. This support is generically termed as 'viability gap funding' throughout this document. This facility will be housed in the department of economic affairs (DEA). Suitable budgetary provisions will be made on a year basis.

Project Proposal and Project Portfolio Process

A technical proposal, often called a "Statement of Work," is a persuasive document. Its objectives are to:

1. Identify what work is to be done
2. Explain why this work needs to be done
3. Persuade the reader that the proposers (you) are qualified for the work, have a plausible management plan and technical approach, and have the resources needed to complete the task within the stated time and cost constraints.

What makes a Good Proposal?

One attribute is appearance. A strong proposal has an attractive, professional, inviting appearance. In addition, the information should be easy to access.

A second attribute is substance. A strong proposal has a well-organized plan of attack. A strong proposal also has technical details because technical depth is needed to sell your

project.

Remember: A proposal is a persuasive document.

Required Format

One aspect of layout is the incorporation of illustrations. In your proposal, each illustration should have a name and be formally introduced in the text. Illustrations consist of figures and tables. Figures include photographs, drawings, diagrams, and graphs. Each figure should have a stand-alone caption, and the key points and features should be labelled. Tables are arrangement of words and numbers into rows and columns. Use tables to summarize lists that the audience will try to find later (the budget, for instance).

Department of Information Technology supports R&D projects in industries (public and private Sector), academic institutes, research labs in the identified thrust area related to Information Technology (Hardware/Software), Information and Broadcasting, Industrial Electronics, Consumer Electronics, Microelectronics and Photonics, Capital Good Development, Strategic Electronics, Communications, Rural Application, Health and Biotechnology, Components including microwaves and millimeter waves and Materials.

According to Max Wideman, author of *A Management Framework for Project, Program, and Portfolio Integration*, the project portfolio life span consists of the following steps:

1. Identification of needs and opportunities
2. Selection of best combinations of projects (the portfolios)
3. Planning and execution of the projects (project management)
4. Product launch (acceptance and use of deliverables)
5. Realization of benefits

Many organizations focus only on Step 3, which involves the planning and execution of projects. However, from a project portfolio management point of view, the focus should be placed on the entire process and not on a single step.

Let's talk about each step and then discuss how the entire process fits together to deliver the best value for an organization.

First, ideas, opportunities, and needs are evaluated based on a predetermined screening process. This screening process starts with the creation of your organization's mission, vision, strategy, goals, and objectives. Once the baseline is established, the ideas, opportunities, and needs are measured against the baseline. Do these new ideas align with corporate strategy? Will solving a defined need improve the value proposition for your business?

Second, once an idea is validated, it continues through the screening process in order to create the best combination of projects for the company. Which of the many good ideas should the organization pursue? Which of all the opportunities will provide the most value

for the organization? In this stage, the ideas, opportunities, and needs identified in Step 1 are put through an additional filter to select the best projects for the portfolio. This concept phase weeds out the good projects in order to select the best projects.

Third, now that a portfolio of projects has been selected and evaluated, it is time to start planning and executing on the projects. At this point, project managers will identify the individual tasks of the project, create a Gantt chart, allocate resources, and oversee the completion of the project. This project management phase is normally where most of the focus is placed due to the time and money involved in making sure that the project is delivered as specified.

Fourth, once the projects have been completed, it is time to launch the product or service. Whether the product is a new piece of software or a new building, the Sponsors of the individual projects need to accept and then use the deliverables of the projects. Did the projects satisfy the predetermined objectives or were they over budget and late? This is the time to reflect upon the projects themselves. Did the organization receive the benefits that it intended to receive?

Fifth, realize the benefits of the projects. Assuming that the projects were successful, now is the time to sit back and reap the benefits of the hard work. The company should be seeing a positive ROI from the portfolio and hopefully hand out bonuses to all of the executives, project managers, and project teams that worked together to produce a great product.

Of course all of this sounds a lot easier than it actually is. Managing the entire process and keeping everybody in the loop can be as challenging as executing on any one of the above tasks. How do you keep the birds eye view while being in the trenches at the same time? How does the Team Member know the objectives of the Planning Committee? What if something goes wrong? Is there a process in place to fix the problem? At what point does a “good” project become a loss? And finally, is there a tool that can be used by the Planning Committee, the Project Managers, and the Team Members that can facilitate this process?

The answer to these questions can be complicated and deserve their own articles, but suffice it to say that it can be done and organizations that learn how to do it will be more effective, innovative, and competitive.

Self Assessment

Fill in the blanks:

- 11..... The chosen must be judged in terms of the total product mix generated by it, including saleable by products.
- 12.....sources of data on livestock and forest products often do not provide a dependable basis for estimation.
- 13.....viability can often be fully financially viable on mechanism that provides government support to reduce project costs.

Summary

- A project should earn sufficient return on the investment.
- Rationing refers to the conscious decision to exclude certain people from a service or treatment that they need.
- Oregon has implemented an innovative health plan that rations health care by developing a prioritized list of treatments.
- Forecast is an estimate of future events and trends and is arrived at by systematically combining past data and projecting it forward in a predetermine a manner.
- Market and demand analysis of various types are undertaken to meet specific requirements of planning and decision making.

□ Demand forecasting is the estimate of future demand.

- Demand forecasting can be at the level of a firm or an industry or at the national or national or international level.
- Accuracy in forecast is measured in terms of past forecasts against current sales and by the percentage of deviation from actual demand.
- Forecasts of demand must be reasonable, consistent and plausible.

4.2

Keywords

Healthcare Rationing: Rationing refers to the conscious decision to exclude certain people from a service or treatment that they need. Rationing takes many forms.

Mineral Products: In assessing mineral raw materials, information is required on the quantum of exploitable deposits and the properties of the raw materials.

Oregon Health Plan: Oregon has implemented an innovative health plan that rations health care by developing a prioritized list of treatments.

Project Initiation: The purpose of Project Initiation is to begin to define the overall parameters of a project and establish the appropriate project management and quality environment required to complete the project.

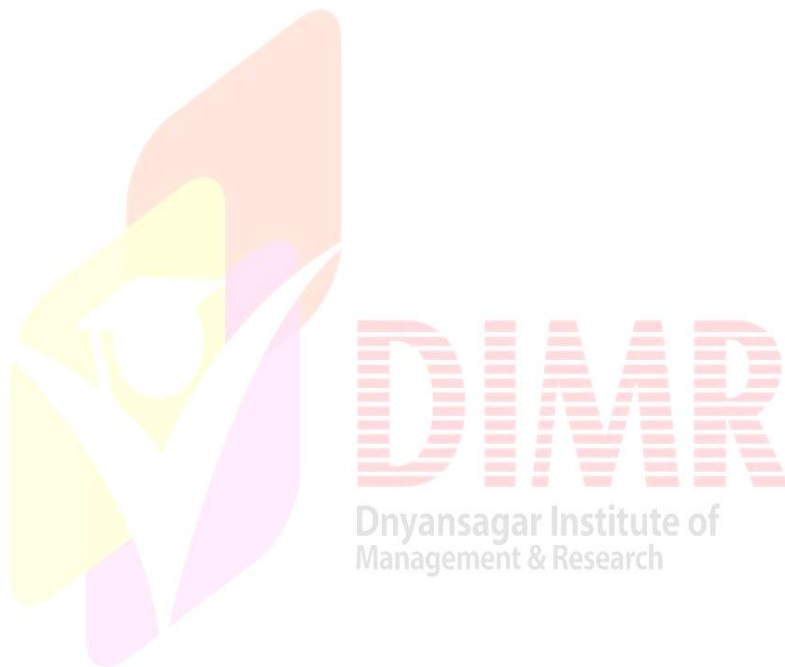
Resource Allocation: Resource allocation is the distribution of resources – usually financial – among competing groups of people or programs.

4.3

Review Questions

1. Describe about Project Initiation and Resource Allocation.
2. Why is Resource Allocation Needed?

3. What do you mean by Healthcare Rationing?
4. Explain about Market Analysis and Demand Analysis.
5. Describe about Time Horizon of Demand Forecasting.
6. Describe the need for Demand Forecasting.
7. What are the levels of Demand Forecasting?
8. Discuss about the criteria for a Good Forecasting Method.
9. What are the methods of forecasting demand?
10. Discuss about the Delphi method of Demand Forecasting.



*Case Study***Corporate Social Responsibility (CSR) and Project Management**

Corporate Social Responsibility (CSR) has gained significant momentum in recent years. The push is on to identify projects that reflect the corporation's sense of social responsibility and to tailor projects to reflect that sense. This is perhaps a step in the right direction when it comes to the corporation's position in the host community, but is extremely difficult and complex in its implementation. There are two key factors that contribute to its difficulty:

1. Corporations' main goal is still profits; they owe this to their shareholders. Although profits and social responsibility are not necessarily mutually exclusive, there is frequently a price tag associated with CSR projects and this creates a conflict: choose the CSR project, or tailor the project to meet CSR objectives OR focus on increased ROI? Where a project meets both objectives, the conflict is eliminated but you know intuitively that this won't always be the case and indeed there are more and more news reports about cases where this wasn't the case.

2. How does the corporation determine what is socially responsible and what isn't? This is seldom clear cut and in many cases different social groups have goals and objectives that are opposed to one another. The corporation can't satisfy the objectives of both groups and will be seen as irresponsible when it chooses one or the other.

These issues are compounded when a corporate citizen of one country engages in work in another with different social values. The chances of a conflict between two social groups who are stakeholders in the venture increase because of the cultural differences between the stakeholders in the home community and those in the foreign country. Companies have invested millions of dollars developing their CSR persona only to see it destroyed by one ugly conflict that gets media exposure. The results achieved by the CSR investment are not newsworthy while the single incident that tarnishes that image is.

Take the recent debate over the behaviour of Canadian mining companies overseas and in South America for example. The media exposure was triggered by a private members bill (C-300) proposed by a member of the Canadian parliament. The bill asks that the federal government assume the power to investigate complaints that any Canadian mining company failed to comply with international human rights and environmental standards. On the face of it, there doesn't seem to be anything a socially responsible mining company could object to. The problem is that the bill can't guarantee that the accused mining company would have the ability to confront their accuser to answer the charges and that is what the association representing Canadian mining companies is objecting to.

The debate on the bill has spawned two stories in the Toronto Star about potential problems with mining operations in Ecuador, Argentina, and Papua New Guinea. The stories include responses from spokespeople of the mining companies involved, but the exposure of these allegations in a national newspaper has tarnished the CSR reputation built up by the mining

companies mentioned. I won't mention those companies here because none of the allegations has been proven. Some of the mining companies have gone to great lengths and expense to build a reputation as socially, economically, and ethically responsible corporate citizens, only to see that reputation threatened by these stories. Now, I'm not suggesting that the allegations are all false. I have no idea as to their validity. What I do know is that in some cases the situation quoted was a no-win situation for the mining company involved. Let's take the example of a Canadian company operating in Ecuador as an example.

According to the article by staff reporter Brett Popplewell in the Monday, November 23, 2009 edition of the Toronto Star, the company is engaged in a project to build an open pit copper mine in Ecuador. The mine has provided jobs for one Ecuadorian community and is popular with it as a result. Another community is fiercely opposed to the project because they fear the mine will negatively impact their small farms and this has led to conflict between the two communities. The Ecuadorian ministry of mines is on-side with the project but apparently has done nothing to quell the conflict between the two communities. Allegations have been made by members of the opposed community that the guards hired by the mining company have used excessive force in dealing with protests against the mine. The guards, of course, are Ecuadorian citizens. Another story in the same paper quotes an accusation of gang rape at a mine in Papua New Guinea, again unproven. The latter allegation is so serious that the paper did not mention the mining company the accusation was leveled at (they did mention the company involved in the Ecuadorian accusations). A third allegation involved a company operating in Argentina. The allegation is that the company used threats to force an Argentine government official out of office.

The companies claim to have followed all the mining laws, rules, regulations, and standards of the countries they are operating in. They further claim to have followed their own code of ethics. These ethics have been developed and implemented at significant expense in some cases. In some cases the spokesperson answering the allegations on behalf of the companies is the Vice President of Corporate Responsibility which is some indication of the emphasis placed on ethical behaviour by these companies. Whether or not these companies have been effective in adhering to the laws of the countries they operate in and their own codes, it is apparent to me that they have honestly tried to do so. What went wrong then?

The problems these companies are currently encountering can be traced back to the factors previously mentioned. Implementing the code of ethics crafted by their CSR organisations will inevitably inflate costs at some point during some projects. Is it possible for a corporation to have two organisations that are in conflict? You bet. Remember we're dealing with people here and as everyone who has worked with others knows, a working relationship leads to differences of opinion. For a team working on a project, the project manager will ask the team members to forsake personal agendas for the good of the project. When the conflicts are operational and conducted at the executive level this approach doesn't always work.

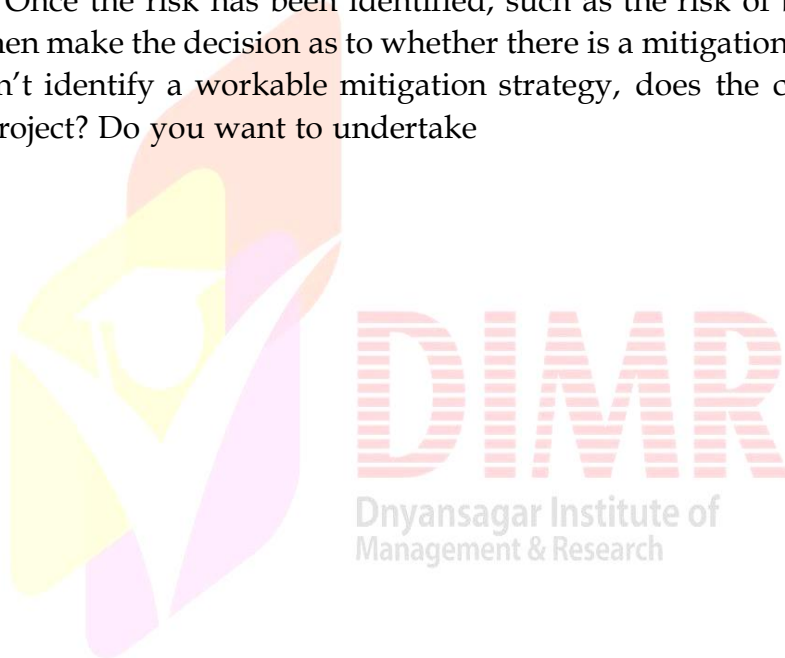
The initiation of the mining project, in the case of the Ecuadorian mine, was enough to initiate a conflict between the two communities in the area of the mine. One suspects that there may

have been issues between the two that pre-date the mine. So how does all this concern the project manager? The issues the Canadian mining companies are experiencing demonstrate the difficulties it is possible to face when doing business in a foreign country. These examples are probably extreme. I'm sure that not many software projects will lead to a corporation facing allegations of physical abuse or rape. On the other hand, the underlying factors will affect any project. The question is what can a project manager do to address these factors?

The first step is for the project manager to understand all the issues that can affect the project, including preexisting local issues. Is it reasonable to expect a project manager to have foreseen the conflict between the two communities involved in the Ecuadorian dispute? I would say given enough education on local issues and the likelihood that the project would only directly financially benefit residents of one of the two communities, the dispute could have been foreseen. How to address the issue is another story. There may or may not have been something the mining company could have done to avoid the conflict but they should at least have anticipated the risk of this happening and if no mitigation strategy was feasible they could then have decided whether they wanted to assume the risk. The object lesson for project managers here is that the exercise of risk identification must be expanded to include not only the risks of a culture clash between the foreign country hosting the project and the corporation's country, but those of different stakeholder groups within the host country. So how would a project manager go about identifying those risks? The answer is that the investigative work required surpasses the activities we normally associate with risk identification. Speaking to members of both communities would have revealed pre-existing conflicts, examining back issues of local newspapers and interviews with local officials would be other sources for the information. The lesson here is that you may have to expand your risk identification exercise to include mining the information that would help you identify risks.

There is another issue that has plagued corporations doing business in foreign countries long before anyone ever heard of CSR, namely the issue of a clash between the laws governing the corporation in the country of origin and the laws and cultural norms of the country hosting the project. The classic example of this clash is the solicitation and payment of bribes. In many countries outside of North America and Europe the solicitation of bribes is not only legal, but is actually encouraged by the local governments. Laws in North America make it illegal for corporations to pay bribes even in foreign countries where doing so is not illegal. This creates a Catch-29 situation for these corporations. If they fail to pay a bribe when one is solicited, they risk incurring costs that might far exceed the bribe solicited. Let's take the case of a bribe solicited to pass imported equipment through customs. The bribe doesn't violate local laws or norms. Failure to pay the bribe will mean that the equipment languishes on a loading dock or customs shed until the project manager either finds an alternative solution that doesn't require the equipment or the project fails. In either case the effect on the project budget is catastrophic. Alternatively, the project manager could pay the bribe and incur criminal charges in North America, which will probably include fines the corporation has to pay. So what do you do if you find yourself in this situation?

The answer is simple; don't find yourself in that situation. The situation described above is untenable and no project manager should be asked to expose themselves to that level of risk, regardless of your views on bribes. You can avoid this situation by investing a little time during the initiation phase of your project to investigate the risks. What are the applicable laws of the country the project, or portion of the project, will be performed in? Will the project call for the importation of any equipment? What are the laws in the corporate headquarters country pertaining to conducting business in a foreign country? What are the international laws pertaining to labour and human rights? Perhaps the best way to approach the investigation is to look at the project scope and your project management approach and determine which questions you should ask. Know the risks going in. Normally, we think of risk identification as a project planning process, but there are some risks which will have a bearing on whether the corporation wants to undertake the project, or whether you want to undertake managing the process. These are the risks that will be identified by asking the right questions. Once the risk has been identified, such as the risk of being solicited for a bribe, you can then make the decision as to whether there is a mitigation strategy that might work. If you can't identify a workable mitigation strategy, does the corporation want to undertake the project? Do you want to undertake



Functions of a Project Manager

Objectives

After studying this unit, you will be able to:

- Define functions of a Project Manager
- Discuss about Roles and Responsibilities of a Project Manager
- Describe about Delegation of Authority
- Explain about Building Project Team
- Discuss about Pure Project Organisation
- Explain about Matrix Organisation

Introduction

A project is an allocation of capital and human resources to achieve time-specific objectives. Project management is the procedure and techniques used to achieve project objectives, which includes identifying, prioritising and scheduling tasks to systematically effect rapid change. Many companies are “managing organisations by projects,” using projects as a way to achieve business goals and strategic plans.

Functions of a Project Manager

The functions are as follows:

1. A project manager has to deliver the performance with better success rates.
2. He is responsible for keeping in touch with the clients who have assigned the project to his company and make them aware of the status of the work finished.
3. He should be able to lead his team and bring out the best in them.
4. A project manager is also responsible for developing a good dialog and communication with the team member for the success of the project.
5. It is his responsibility to perform efficiently and honestly.
6. By the virtue of being a manager, he has to maintain confidentiality.
7. He is responsible for establishing easy communication between the employees and the higher authority.
8. In case of emergency, he should be able to solve problems for his team members.
9. He is responsible for good team building, which is defined by success.

10. He is responsible for accomplishing project objectives and the outcome (success or failure) of the project.

Roles and Responsibilities of a Project Manager

Project Manager Duties and responsibilities are closely related to each other. The terms go hand in hand with a fine line of distinction. A project manager's role in the growth of a company is a significant one. Find in this article a detailed information on the duties and responsibilities of the project manager.

A manager is someone who manages the five Ms of a business, namely men, material, machine, money and motivating factors. A project manager receives formal project management training to deal with any project, closely related with construction, architecture, telecommunications and other infrastructural projects. Project managers also manage projects related to the fields of design, sales and services. Basically, the job description of a project manager is to manage the project that he is assigned with. Hence, he becomes accountable for both, starting the project as slated, and finishing it on time.

Difference between Duty and Responsibility

Duties and responsibilities go hand in hand. However, there is a fine line of distinction between the two. Duty is a task performed by a person out of his job profile and responsibilities are obligations for which he is accountable. All duties may not be responsibilities, but all responsibilities are duties. For example, it is a manager's duty to manage the task, but it is not

his responsibility to pay for someone's mistake. Project management is associated with imparting the duties and responsibilities for a manager. The duties and responsibilities of a project manager have been studied by many management experts and are made to suit business in the most effective ways. Those aspiring to be project managers have to learn to be on an eternal vigil, develop a vision, take proactive decisions and understand the diversity in training. Project management is a discipline of planning, organising and managing a specific task and bring about its completion with Excellency.

Self Assessment

Fill in the blanks:

1. Project Manager and responsibilities are closely related to each other.
2. A manager is someone who manages the five Ms of a , namely men, material, machine, money and motivating factors.

3. Project managers also manage projects related to the fields of , sales and services.
4. Duty is a task performed by a person out of his. profile and responsibilities are obligations for which he is accountable.
5. The duties and responsibilities of a project manager have been studied by many experts and are made to suit business in the most effective ways.

Delegation of Authority

Authority is the key to managerial job. It de the right to make decision and command subordinates to confirm these decisions. When the office manager is over burdened with official assignments, he may allocate or divide it among the subordinates to get the work done by them. The process of allocation of office work among the subordinates is called delegation of authority. So delegation of authority means giving the subordinate authority to do something which the executives do not have time to do. The process of delegation gives a gain to the subordinates because they become closer with the supervisor.

Delegation of authority involves:

1. Assigning of duties to subordinates.
2. Delegating required amount of authority to the subordinate to enable them to discharge the duties assigned to them.
3. Assumption of responsibility by the subordinates. Building Project Team

If we are building a project team we should keep following points in our mind:

Suppose that you as a manager have been asked to form a team for the life of a particular project. How should you set about choosing your people and forming them into a well functioning group?

Selecting Your Team

Take care to choose the right people. Pick them for their skills and abilities as they apply to your particular project. You don't necessarily need the person most qualified in absolute terms, but you need the person most qualified for your specific project. Concentrate on the skills you need for the job in hand. Don't be seduced by reams of paper qualifications that you will never need.

You almost certainly need a mixture of team members each with a different set of skills and abilities, rather than a series of clones all with identical skills. Ensure that taken as a group

they together represent all the skills you need in the proportions that you need them.

Don't overlook the need to choose people who can all get along with each other and work together as a team. A group of prima donnas is the last thing you want.

Set the Tone and the Ground Rules

Do this at your very first team meeting. Make sure that you call this at the very start of your project and that everyone in your team comes to the meeting. Don't be late yourself and don't allow lateness in others.

This is the meeting where you have to make it clear who is in charge and what you expect from your team. This is where the team hierarchies and reporting structures are restated. This is the time to remove any ambiguities or potential conflicts. Make sure everyone is clear about his role and responsibilities. Delegate tasks as appropriate and make it clear who hold the delegated authority.

Setting Clear Goals

You must set clear achievable goals. You must set them for your team as a whole and you must set them for the individuals within your team. They must be unambiguous and they must be mutually attainable. That is to say, no one individual's goal should in any way conflict with that of another individual. In fact you want it to be in everybody's interest that each individual achieves his own goal. Design the goals accordingly. You must try to build a team that works together with common aims, all working towards the same final goal.

Achievable Early Goals

Make use of your goals to build team spirit and enthusiasm. Do this by setting small, easily-attainable goals early in your project while your team is still bedding-in and settling down. Make them worthwhile goals, but goals that you are almost certain can be reached. In this way your team will notch up some early successes, which will certainly boost morale and establish a sense of pride in the achievement. Later goals that you set can (and should) be more taxing and testing, but the early successes will do wonders for the spirit of the team. This spirit will endure long into the future as the going gets tougher.

Caution The goals set should be clear in their objective and it should be set for the team as well as for every team member within the team.

Communication

It is almost impossible to exaggerate the importance of communication within any

organisation, and in particular within a project team. Make it your duty to ensure that everyone within your team knows what is going on. Make sure that everyone knows of outside events that will affect the team. Make sure that everyone knows their own goals and objectives and those of the team as a whole. Make sure they know the objectives of those interfacing to them and of any potential conflicts. Make sure that a problem or a delay in one area is immediately communicated to those whom it may affect.

Encourage and foster cooperation, not competition. Make sure it is in no-one's interest to keep information to themselves. Communication will come naturally if it is in everyone's own interest - and this will be the case if you have earlier ensured that you all have common mutually interdependent goals.

These guidelines on their own are certainly not enough to guarantee a fully functional and successful team, but following them will go a long way towards creating one. On the other hand, if you don't follow them your chances of success will be minimal.

Did u know? It is almost impossible to exaggerate the importance of communication within any organisation, and in particular within a project team.

Self Assessment

Fill in the blanks:

6. _____ is the key to managerial job. It de the right to make decision and command subordinates to confirm these decisions.
7. _____ of authority means giving the subordinate authority to do something which the executives do not have time to do.
8. _____ The process of delegation gives a gain to the subordinates because they become closer with the
9. _____ It is almost impossible to exaggerate the importance of _____ within any organisation, and in particular within a project team.

Project Organisation

Establishing the project organisation is one of the more important things to do at the start of a project. This is particularly so for any large project and *particularly* so for any green field site project where there is no project organisation in existence and no precedent to fall back on.

Setting up a large project from scratch is like setting up a new company. It requires much of the same entrepreneurial drive, skill and imagination. Something like 90% of UK companies employ less than 10 people. Starting up a large project is akin to setting up a company in the top ten percent of UK companies by size. If you were a senior executive and decided to set

up a new subsidiary company that will employ, say, 100 people would you choose a fairly junior manager with no experience of company set up who you don't even know and you don't even bother to interview to set that new company up for you?

And yet executives have been known to entrust the management of large IT projects – even projects with the potential to break the company – to junior managers who have no demonstrated ability to perform the task. And when was the last time you heard of a project board putting candidate project managers through a rigorous interviewing and selection process?

Project Organisation Chart

Why don't they? Well, if they want a Managing Director to set up a new subsidiary they know what questions to ask them; they know what they looking for; the new MD will be someone like them. But a project manager? They wouldn't know what to ask or what to look for. Anyway, surely anyone can manage a project?

And if you were setting up that new subsidiary would you pick someone whose only qualification was that they had been on a 5 day business management course and had a certificate to prove it? But he's done a 5 day project management course and got a certificate? Give him the job!

We read in the press about major companies that have significant and costly business problems because new IT systems don't work properly. The public sector has its own horror stories too. There are, as always, many causes for such problems but amongst them will be a lack of a proper project organisation, symptomatic of which are comments such as these from senior executives:

1. "the project is being done for us by the software house"
2. "the IT Director's in charge - isn't he?"
3. "the project manager? Some guy from IT, I think."
4. "we don't need a project manager - the software house is managing it for us."
5. "*my* responsibilities? How do you mean?"
6. "dedicate *our* people to the project? Why do you think we employed the software house?"

Project Organisation chart starts at the top. That is, the top of the company. If the Chief Executive does not hold anyone responsible for the project not only will a key – the key – accountability be missing, but accountability will probably not be assigned further down the project organisation hierarchy.

This course therefore covers not just the things that the project manager and team members should do and be accountable for. It starts at the top and addresses how to get proper accountability established at company board level and how this should be propagated down

through the project organisation. And how the same kind of thought processes that would go into setting up the organisation of a new company should go into the setting up of a large project.

The course covers the things that each person in the project organisation should be accountable for and then goes on to examine the practicalities - the mechanics - of how they should do things like risk management, estimating, planning, reporting and a host of other things.

Example of Pure Project Organisational Structure

In organisational theory, nothing is “pure.” The pure types of organisation exist for the sake of analytical clarity, not as a description of how things work. A “pure project organisational structure” is one such “pure” form that does not really exist. However, many aspects of social and economic life come close to it. The pure organisation is applicable in both business and political life, though actual examples can be found mostly in the political arena.

Pure Organisation

A “pure project organisation” is a model of a business where project managers have total control over the project they oversee. Central control at the managerial level must be weak for this to occur. Put simply, a “pure project organisation” might also be termed a “task force.” In the case of a “pure project,” the leader of this task force would have to be given total authority for a limited period to solve a particular problem. In business, it is a great challenge to find an example of such purity.

The Task Force

In politics, the concept of a “task force” that approximates the total control over a specific project under a “manager” of sorts is not hard to find. In Latin America, poor and divided governments have struggled to control the drug lords who can outshoot and outspend the state. From the 1960s to 2011, Latin American states have dealt both with leftist terrorism and drug violence — occasionally the same thing, as in Peru — by either declaring a state of emergency or installing a military government.

Guatemala

On December 19, 2010, the president of the impoverished state of Guatemala, Alvaro Colom, declared a state of emergency in the northern state of Alta Verapaz. This area is heavily wooded and difficult to police and has become a major staging ground for Mexican drug gangs to gather their forces and ship cocaine to the United States. On the January 21, 2011, Colom extended the state of emergency in that state, placing all military and police control under Interior Minister Carlos Menocal. To some extent, Menocal is leading a multi-jurisdictional task force to wipe out the drug gangs from this state bordering Mexico. This

comes very close to acting as a “pure project organisation.”

Menocal and Colom

This example, like most examples of a pure project structure, is political and is a response to an extreme emergency. Since 2000, the murder rates in northern Guatemala have doubled, reaching higher than the death rate during that country’s civil war. Menocal is, as of early 2011, declaring an early success, holding that drug flights bound for the U.S. have been almost totally halted. In January 2011, soldiers under the Interior Ministry had seized more than \$1 million worth of military equipment and drugs from criminal groups in that area. While it is true that Menocal does not have total, dictatorial power over the army as the “pure” form demands, he does have a large degree of temporary control over the deployment of troops for the time being. Hence, his is a good example of a “pure project structure” in the political arena.

Matrix Organisation

Matrix Organisation was introduced in USA in the early 1960s. It was used to solve management problems in the Aerospace industry. Matrix Organisation is a combination of two or more organisation structures. For example, matrix organisation include Functional Organisation and Project Organisation.

The organisation is divided into different functions, e.g. Purchase, Production, R&D, etc. Each function has a Functional (Departmental) Manager, e.g. Purchase Manager, Production Manager, etc.

The organisation is also divided on the basis of projects, e.g. Project A, Project B, etc. Each project has a Project Manager, e.g. Project A Manager, Project B Manager, etc.

The employee has to work under two authorities (bosses). The authority of the Functional Manager flows downwards while the authority of the Project Manager flows across (side wards). So, the authority flows downwards and across. Therefore, it is called “ **Matrix Organisation**”.

An example of matrix organisation is shown in the following table:

Did u know? Employees in a matrix organisation report on day-to-day performance to the project managers whose authorities flow in horizontal directions.

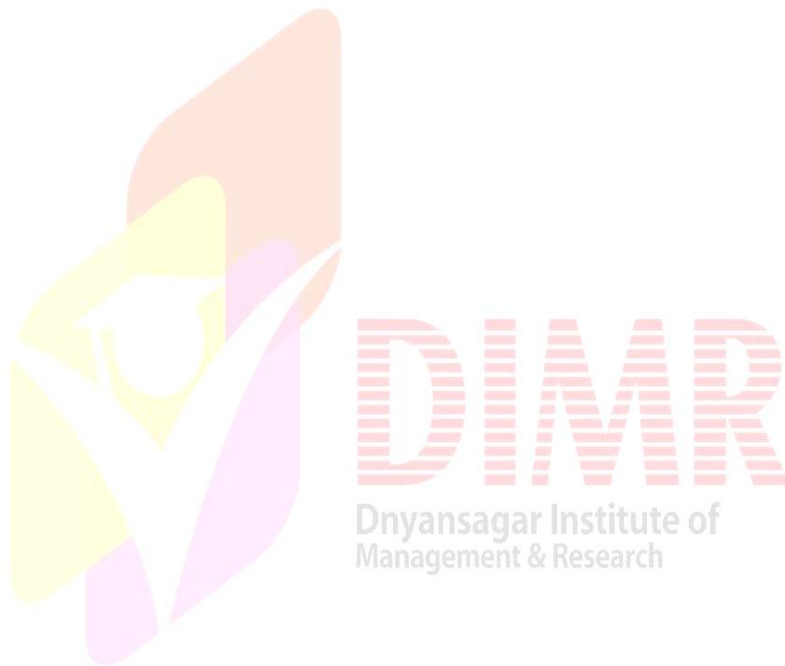
5.1.2 Features of Matrix Organisation

The peculiarities or **characteristics** or features of a matrix organisation are:

1. **Hybrid Structure:** Matrix organisation is a hybrid structure. This is so, because it is a combination of two or more organisation structures. It combines functional organisation

with a project organisation. Therefore, it has the merits and demerits of both these organisation structures.

2Functional Manager: The Functional Manager has authority over the technical (functional) aspects of the project.



The responsibilities of functional manager are:

- (a) He decides how to do the work.
- (b) He distributes the project work among his subordinates.
- (c) He looks after the operational aspects.

3. **Project Manager:** The Project manager has authority over the administrative aspects of the project. He has full authority over the financial and physical resources which he can use for completing the project.

The responsibilities of project manager are:

- (a) He decides what to do.
- (b) He is responsible for scheduling the project work.
- (c) He coordinates the activities of the different functional members.
- (d) He evaluates the project performance.

4. **Problem of Unity of Command:** In a matrix organisation, there is a problem of the unity of command. This is so, because the subordinates receive orders from two bosses viz., the Project Manager and the Functional Manager. This will result in confusion, disorder, indiscipline, inefficiency, etc. All this will reduce the productivity and profitability of the project.

5. **Specialisation:** In a Matrix organisation, there is a specialisation. The project manager concentrates on the administrative aspects of the project while the functional manager concentrates on the technical aspects of the project.

6. **Suitability:** Matrix organisation is suitable for multi-project organisations. It is mainly used by large construction companies that construct huge residential and commercial projects in different places at the same time. Each project is looked after (handled) by a project manager. He is supported by many functional managers and employees of the company.



Advantages of Matrix Organisation

The benefits or merits or advantages of a matrix organisation are:

- 1. **Sound Decisions:** In a Matrix Organisation, all decisions are taken by experts. Therefore, the decision are very good.
- 2. **Development of Skills:** It helps the employees to widen their skills.

Marketing people can learn about finance, finance people can learn about marketing, etc.

3. **Top Management can concentrate on Strategic Planning:** The Top Managers can spend more time on strategic planning. They can delegate all the routine, repetitive and less important work to the project managers.

4. **Responds to Changes in Environment:** Matrix Organisation responds to the negative changes in the environment. This is because it takes quick decisions.

5. **Specialisation:** In a matrix organisation, there is a specialisation. The functional managers concentrate on the technical matters while the Project Manager concentrates on the administrative matters of the project.

6. **Optimum Utilisation of Resources:** In the matrix organisation, many projects are run at the same time. Therefore, it makes optimum use of the human and physical resources. There is no wastage of resources in a matrix organisation.

7. **Motivation:** In a matrix organisation, the employees work as a team. So, they are motivated to perform better.

8. **Higher Efficiency:** The Matrix organisation results in a higher efficiency. It gives high returns at lower costs.

Limitations of Matrix Organisation

The demerits or disadvantages or limitations of a matrix organisation are:

1. **Increase in Work Load:** In a matrix organisation, work load is very high. The managers and employees not only have to do their regular work, but also have to manage other additional works like attending numerous meetings, etc.

2. **High Operational Cost:** In a matrix organisation, the operational cost is very high. This is because it involves a lot of paperwork, reports, meetings, etc.

3. **Absence of Unity of Command:** In a matrix organisation, there is no unity of command. This is because, each subordinate has two bosses, viz., Functional Manager and Project Manager.

4. **Difficulty of Balance:** In a matrix organisation, it is not easy to balance the administrative and technical matters. It is also difficult to balance the authority and responsibilities of the project manager and functional manager.

5. **Power Struggle:** In a matrix organisation, there may be a power struggle between the project manager and the functional manager. Each one looks after his own interest, which causes conflicts.

6. **Morale:** In a matrix organisation, the morale of the employees is very low. This is because they work on different projects at different times.

7. **Complexity:** Matrix organisation is very complex and the most difficult type of

organisation.

8. *Shifting of Responsibility*: If the project fails, the project manager may shift the responsibility on the functional manager. That is, he will blame the functional manager for the failure.

Project Team and Human Factors

The real critical success factor of any implementation project is the ability to break through “fixed ideas.” The extent to which this can be done will have a decided impact not only on the success of the implementation, but also the success of the system once it is in production. The importance of breaking through the fixed ideas. One example of this is just the view people adopt about the role of technology in an implementation. Whether you are talking about new roles – changing processes, using technology to work more effectively and efficiently, you are generally talking about breaking down fixed ideas.

One of these fixed ideas in project implementation is the concept that success lies in finding the perfect technology solution to the problem – nothing could be further from the truth. While consistently getting more focus, probably because they are more clear cut, the technology issues in an implementation are normally the more easily resolved in the typical project; while the less clear cut human factors are pushed to the back burner. In reality the success or failure of any project implementation rests on the ability of the principals involved to manage the “human factors” of the project. Another common example of fixed ideas is the adherence to procedures simply because that is the way “we have always done it”. Many opportunities are lost in system implementations because the people involved refuse to view the implementation as an opportunity to evaluate current processes and look for better ways of working.

If success is measured both in terms of bringing the project in on time and within budget as well as the satisfaction with and the ability of the users to use the new system, then managing these “human factors” is the real key to the success of any implementation. This puts a lot of pressure on the project leadership and/or perhaps even more pressure on those who appoint that leadership team.

Self Assessment

State True or False:

10. Establishing the project organisation is one of the more important things to do at the start of a project.
11. A “pure project organisation” is a model of a business where project managers have total control over the project they oversee.
12. Matrix Organisation was introduced in UK in the early 1960s.
13. Matrix organisation is a hybrid structure.
14. The Functional Manager has authority over the physical aspects of

the project.

15. The Project manager has authority over the administrative aspects of the project.

5.2

Summary

- A project manager has to deliver the performance with better success rates.
- He is responsible for keeping in touch with the clients who have assigned the project to his company and make them aware of the status of the work finished.
- He should be able to lead his team and bring out the best in them.
- Project Manager Duties and responsibilities are closely related to each other.
- A manager is someone who manages the five Ms of a business, namely men, material, machine, money and motivating factors.
- A project manager receives formal project management training to deal with any project, closely related with construction, architecture, telecommunications and other infrastructural projects.
- It is almost impossible to exaggerate the importance of communication within any organisation, and in particular within a project team.
- Matrix Organisation was introduced in **USA** in the early 1960's.
- Matrix organisation is a hybrid structure.
- The Functional Manager has authority over the technical (functional) aspects of the project.

5.3

Keywords

Delegation of Authority: Authority is the key to managerial job. It de the right to make decision and command subordinates to confirm these decisions.

Functional Manager: The Functional Manager has authority over the technical (functional) aspects of the project.

Hybrid Structure: It is a combination of two or more organisation structures.

Manager: A manager is someone who manages the five Ms of a business, namely men, material, machine, money and motivating factors.

Matrix Organisation: Matrix Organisation was introduced in **USA** in the early 1960's. It was used to solve management problems in the Aerospace industry. Matrix Organisation is a combination of two or more organisation structures.

Pure Organisation: A “pure project organisation” is a model of a business where project managers have total control over the project they oversee. Central control at the managerial level must be weak for this to occur.

Task Force: In politics, the concept of a “task force” that approximates the total control over a specific project under a “manager” of sorts is not hard to find. In Latin America, poor and divided governments have struggled to control the drug lords who can outshoot and outspend the state.

Review Questions

1. Discuss the functions of a project manager.
2. List the role and responsibilities of a project Manager.
3. What do you know about delegation of authority?
4. Explain about Building Project Team.
5. Discuss about Project Organisation.
6. Describe about Pure Project Organisation.
7. Explain about the matrix organisation.
8. Discuss about the Project Team and Human factors.

