CHAPTER ONE: INTRODUCTION AND OVERVIEW OF PROJECT MANAGEMENT

Everyone at some time in his/her life will be involved in a project of one kind or another. In fact, the reality is that most of us have been involved in many projects for some considerable time and will face many more in the months and years ahead.

Project management is the process of achieving goals and objectives through the interaction between people, funds and activities.

Management is the process or function of planning, organizing, directing, staffing and controlling.

Project management offers a structured approach to managing projects. As the use of projects becomes more pervasive, so more managers are entering the field of project management, their success will be helped by their ability to develop fully integrated information and control system to plan, instruct, monitor and control large amount of data, quickly and accurately to facilitate the problem solving and decision-making process.

Importance of project management

1. Provides structures to ensure that projects are relevant, feasible and sustainable.
2. Increases our understanding, knowledge and skills about projects
3. Provides ability to manage project objectives and budgets.
4. Contribute to achieving and managing projects of your own this leads to self-reliance.
5. Foster critical and analytical skills and key completeness of understanding concepts.
6. Provides better control of financial, physical and Human resources

PROJECT MANAGERS

Project managers are responsible for managing projects. They coordinate projects and related tasks, but do not usually have direct management responsibilities for resources assigned to their project. The resources involved in one project may not be the same resources involved in another project. Project managers focus only on work that is specific to their project, and are primarily task and time-constrained.

As the project manager is the single point of responsibility, it is the project manager's job to set up management structure which not only meets the needs of the project, but the needs of the organization, the needs of stakeholders and the needs of the individual working on the project as well.

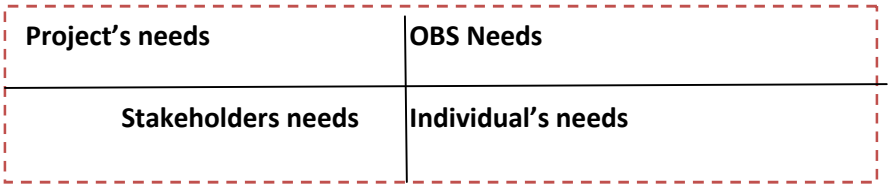


Figure 1.1: (OBS= Organization Breakdown Structure)

Many organizations today have a new or renewed interest in project management. Computer hardware, software, networks, and the use of interdisciplinary and global work teams have radically changed the work environment. The U.S. spends $2.3 trillion on projects every year, or one-quarter its gross domestic product, and the world as a whole spends nearly $10 trillion of its $40.7 gross product on projects of all kinds.

Who is project Manager?

- Project Manager is an individual responsible for delivering the project" (OGC) (Single point of responsibility) also leads and manages the project team, with the authority and responsibility to run the project on a day-to-day basis of the project given period.

THE ROLE OF THE PROJECT MANAGER

Job descriptions vary, but most include responsibilities such as

- ✓ Planning, scheduling, coordinating, and working with people to achieve project goals.
- ✓ Remember that 97 percent of successful projects were led by experienced project managers.

FUNCTIONS OF PROJECT MANAGER

- ✓ Define scope of project.
- ✓ Identify stakeholders and decision-makers.
- ✓ Develop detailed task list (work breakdown structures).
- ✓ Estimate time requirements.
- ✓ Develop initial project management flow chart.
- ✓ Identify required resources and budget.
- ✓ Evaluate project requirements.
- ✓ Identify and evaluate risks.
- ✓ Prepare contingency plan.
- ✓ Identify and track critical milestones.
- ✓ Participate in project phase review.
- ✓ Secure needed resources.
- ✓ Manage the change control process.
- ✓ Report project status.
- ✓ And etc.

ATTRIBUTES OF PROJECT MANAGER

- ✓ Ability to select and develop operational team.
- ✓ Ability to anticipate problems, solve problems and make decisions.
- ✓ Operational flexibility.

- ✓ Leadership and management ability.
- ✓ Understand the environment within which the project is being implemented.
- ✓ Ability to keep the client and stakeholders happy.

Suggested Skills for Project Managers

Project managers need a wide variety of skills.

- These should:
  - Be comfortable with change.
  - Understand the organizations they work in and with.
  - Lead teams to accomplish project goals.
- Project managers need both "hard" and "soft" skills:
  - Hard skills include project knowledge and knowing how to use various project management tools and techniques.
  - Soft skills include being able to work with various types of people.
- Communication skills: Listens, persuades.
- Organizational skills: Plans, sets goals, analyzes.
- Team-building skills: Shows empathy, motivates, promotes esprit de corps.
- Leadership skills: Sets examples, provides vision (big picture), delegates, positive, energetic.
- Coping skills: Flexible, creative, patient, persistent.
- Technology skills: Experience, project data base knowledge.

Types of Project

- ✓ Infrastructural projects for Government
- ✓ Humanitarian projects for NGOs
- ✓ Investment and Business for Business ORG
- ✓ Basic needs project for both public and Private
- ✓ Environmental and natural resource projects
- ✓ Technology investment projects

Project Time Management

- o Time and Schedule
- o Planning
- o Managing

Project Cost Management

- o Managing costs
- o Out of your control
- o Competing projects

Project Quality Management

- o Planning quality
- o Enforcing quality
- o Checking quality control

Project Human Resource Management

- o Organizational planning
- o Staff acquisition
- o Team working
- o Delegation of activities

Project Communications Management

- Communication plan
- Flow up communication
- Horizontal and vertical

Project Risk Management

- Risk management plan
- Contingency approach

Project Procurement Management

- Acquisition and contract management
- Suppliers
- Venders

FEW BASICS ABOUT PROJECT MANAGEMENT

1. Successful projects - on time, on budget, with all features and functions initially specified.
2. Failed projects - cancelled before completion or never implemented.
3. Challenged projects -were completed and operational, but over-budget, over the time estimate, and with fewer features.

The Triple Constraint

Every project is constrained in different ways by its:

- Scope: what work will be done?
- Time goal: how long should take to complete?
- Cost goal: what should it cost?
- Quality goal: how long should sustain?

- It is the project manager's duty to balance these three often-competing goals.
- To be effective the Project Manager needs to be able to control three aspects of the project:
  a) Deliver on time
  b) Within budget
  c) To the agreed quality

Project vs. Program

- Project: is a set of coordinated activities needed to meet specific goal and objectives in specified budget and time example PUCTAD foods security project.
- Program: is a group of related projects managed in coordinated way to obtain benefits and control as whole until it has been successfully completed example PUCTAD Puntland programmes.

Project	Programme
Short Time	Long time
Narrow scope	Wide in scope
Success is measured by scope, time and cost	Success is measured by ROI and benefit realization
Risk is relatively easy to identify and manage	Program risk is more complex

Project stakeholders

Stakeholders are the people involved in or affected by project activities.

Stakeholders include:

- ✓ Project sponsor
- ✓ Project manager
- ✓ Project team

- ✓ Support staff
- ✓ Customers
- ✓ Users
- ✓ Suppliers & contractors

Nine PM knowledge areas

- Knowledge areas describe the key competencies that project managers must develop.
- Four core knowledge areas lead to specific project objectives
    a) scope,
    b) time
    c) cost
    d) quality
- Four facilitating knowledge areas are the means through which the project objectives are achieved
    a) human resources,
    b) communication,
    c) Risk
    d) procurement management)

The Project Management Profession

- ✓ Professional societies such as the Project Management Institute (PMI) have grown significantly. there are specific interest groups in many areas, such as - engineering,
    a) financial services,

b) health care and IT
c) Project management research and certification programs continue to grow.

Ethics in Project Management

- Ethics is an important part of all professions.
- Project managers often face ethical dilemmas.
- In order to earn PMP certification, applicants must agree to the PMP code of professional conduct.
- Several questions on the PMP exam are related to professional responsibility, including ethics.

Projects challenges

- ✓ Time constrains and inadequate funds
- ✓ Donor supervision
- ✓ Project implementation
- ✓ Project forecasting and estimation

Case study and exercise (1)

You have been appointed by the CEO of a Golis telecommunication company to make short presentation to the board of directors about benefits of using projects on the company's next project. Your short presentation (written or verbal) should consider the following:

1. Explain what project management is and why it is different to other forms of management.
2. Explain how project management can be applied to Golis company
3. Outline the role of project manager
4. Outline the features of project manager
5. Suggest small pilot project on which you can develop your project management system.

CHAPTER TWO: DEFINING THE TERM PROJECTS

What is the project?

Project is a set of coordinated activities to meet a specific goal and purpose in specified time period and budget.
Projects with a common goal form a Programme.

Characteristics of project

- ✓ One clear objective
- ✓ A fixed time scale
- ✓ A team of people
- ✓ A unique purpose.
- ✓ Temporary.
- ✓ Requires resources, often from various areas.
- ✓ Should have a primary customer or sponsor
- ✓ Single point of responsibility (the project manager)

WHAT NEEDS TO BE MANAGED DURING PROJECT?

Projects are organized and staffed by people of varying skills, responsibilities and roles. In order to perform their work, these people use processes (ad hoc or standardized) and tools.

Projects are constrained by many factors. The common ones are time, cost, resources, product requirements and quality. The ultimate goal of a project team is to deliver a product on time, within budget, that meets the product requirement and quality constraints.

To achieve this goal the team must use effective methods to manage the people, processes and tools used for the project. The following need to be considered for each:

✓ People

- Identification of roles, responsibilities, and skills needed for the project.
- Identification of types and numbers of people resources needed to meet project roles, responsibilities and skill requirements- technical development (architects, analysts, programmers, etc.), managerial (senior management, project management), quality assurance, product marketing, operations, etc.
- Identification of staffing sources - use of existing organizational resources, contractors, new hires
- Organization of people resources into effective teams with the necessary communication interfaces.
- Communication of project mission and individual team assignments
- Training on project methods (management and technical), communication skills, technology and tools
- Communication on project status, issues, problems and changes. Effective communication to all project team members
- Communication on effectiveness of project methods, tools and work environments
- Implementation of methods, tools and work environment improvements
- Measurement of team and individual performance (based on project values/expectations); implementation of performance improvements
- Monitoring of project staffing/skill needs; maintaining necessary staffing levels and/or re-assigning roles and responsibilities

✓ Processes

- Definition of the management and technical methods needed for the project
- Selection of the appropriate management and technical methods from the organizational Product Development Process
- Acquisition and/or development of project specific methods not available in the organizational Product Development process
- Implementation of process effectiveness measurements
- Monitoring of process effectiveness, implementation of process improvements

✓ Tools

- Evaluation of project tools required to support chosen management and technical methods.

PROJECT SPONSOR

The project sponsor usually provides the following:

a) direction of the project
b) Funding for the project.
c) Involves uncertainty
d) Monitors the project
e) Evaluates projects

CREATING THE WORK BREAKDOWN STRUCTURE

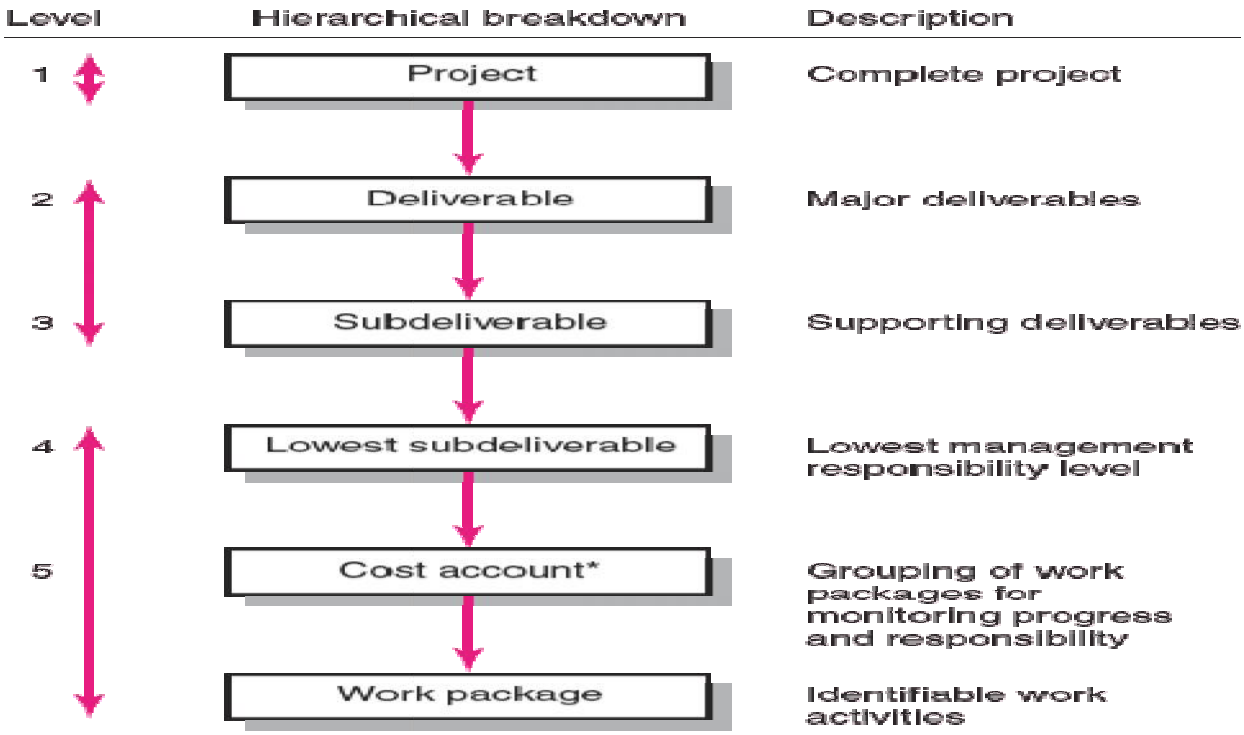
Work Breakdown Structure (WBS) is the

✓ An hierarchical outline (map) that identifies the products and work elements involved in a project

✓ Defines the relationship of the final deliverable (the project)

- ✓ Best suited for design and build projects that have tangible outcomes rather than process-oriented projects

Hierarchical Breakdown of the WBS



How WBS Helps the Project Manager

- o Facilitates evaluation of cost, time, and technical performance of the organization on a project
- o Provides management with information appropriate to each organizational level
- o Helps in the development of the organization breakdown structure (OBS),

- which assigns project responsibilities to organizational units and individuals
- Helps manage plan, schedule, and budget
- Defines communication channels and assists in coordinating the various project elements.

INTEGRATING THE WBS WITH THE ORGANIZATION

- Organizational Breakdown Structure (OBS)
  - Depicts how the firm is organized to discharge its work responsibility for a project
    - Provides a framework to summarize organization work unit performance
    - Identifies organization units responsible for work packages
    - Ties the organizational units to cost control accounts

CODING THE WBS FOR THE INFORMATION SYSTEM

- WBS Coding System
  - Defines:
    - Levels and elements of the WBS
    - Organization elements
    - Work packages
    - Budget and cost information
  - Allows reports to be consolidated at any level in the organization structure

Project Communication Plan

- ✓ What information needs to be collected?
- ✓ Who will receive information?
- ✓ What information methods will be used?
- ✓ What are the access restrictions?
- ✓ When will information be communicated?
- ✓ How will information be communicated?

Communication Plan:

What Information	*Target Audience*	*When?*	*Method of Communication*	*Provider*
Milestone report	Senior management and project manager	Bimonthly	E-mail and hardcopy	Project office
Project status reports & agendas	Staff and customer	Weekly	E-mail and hardcopy	Project manager
Team status reports	Project manager and project office	Weekly	E-mail	Team recorder
Issues report	Staff and customer	Weekly	E-mail	Team recorder
Escalation reports	Staff and customer	When needed	Meeting and hardcopy	Project manager
Outsourcing performance	Staff and customer	Bimonthly	Meeting	Project manager
Accepted change requests	Project office, senior mgmt., customer, staff, and project mgr.	Anytime	E-mail and hardcopy	Design department
Oversight gate decisions	Senior management and project manager	As required	E-mail meeting report	Oversight group or project office

Case study and exercise (2)

Projects are run by good communication. For this case study you have been appointed project manager on an offshore platform. Your presentation should outline how you will approach the following:

1. Communication cycle- data capture, processing, dissemination and storage.
2. Lines of communication
3. Progress meeting
4. Document control
5. Handover meeting

CHAPTER THREE: PROJECT LIFE CYCLE

What is a Project Management Life Cycle?

The way in which projects are planned and carried out follows a sequence that has become known as the project life cycle.

Project Management Life Cycle is a set of activities that starts and ends at identifiable points in time and that produces quantifiable and deliverables. Project life cycle subdivides the scope of work into sequential process.

There is general agreement that most projects pass through five phase life cycle.

STAGES OF PROJECT LIFE CYCLE

The generic project cycle has five phases. The details of what occurs during each phase differ between institutions, reflecting differences in procedures. However, within all institutions the cycle shares three common themes:

1. The cycle defines the key decisions, information requirements and responsibilities at each phase.
2. The phases in the cycle are progressive – each phase needs to be completed for the next to be tackled with success.
3. The cycle draws on evaluation to build experience from existing projects into the design of future programmes and projects.

The phases of the project cycle can be described as follows:

1. INITIATION/IDENTIFICATION STAGE

- It is the first stage of projects life; it is where the project ideas are generated before they are planned.
- The first phase starts the project by establishing a need or opportunity for the product, facility or service.

MAIN ACTIVITIES TO BE DONE IN IDENTIFICATION STAGE

1. Brainstorming and discussions
2. Ideas generation
3. Ideas screening
4. Selection of priorities/alternatives
5. Choosing of best alternatives
6. Choosing last decision about the idea

SOURCE OF PROJECT IDEAS

- Weakness of an existing projects
- Donor consideration and conditioning (IMF and World bank)
- Research findings
- Bureaucratic (politicians, directors who ask to write proposal)
- Government desires to respond political/social pressure

WHERE CAN YOU FIND THOSE IDEAS

- Magazines
- Internet/websites
- Brainstorming
- Discussions

WHY SOME PROJECT IDEAS ARE ELIMINATED

- Over ambitious
- Too expensive
- Unsustainable projects
- Projects in conflict with people's norms and values
- Project ideas that are not friendly with the environment
- Inadequate raw materials and skills
- Technically unsound projects

- Too risk projects
- Projects that produce products into the wrong markets E.g. killer drugs, weapons and ammunitions.

2. PLANNING AND DESIGNING STAGE

- It is second stage of project life cycle
- Efforts spent in planning saves countless hours of confusion and rework in the subsequent phases

MAIN ACTIVATES TO BE DONE IN PLANNING STAGE

- ✓ Funding/cost
- ✓ Human resource planning
- ✓ Facilities and tools planning
- ✓ Activities planning
- ✓ Scheduling (time)
- ✓ Scope planning
- ✓ Project quality planning

PURPOSE OF PROJECT PLANNING

- Establish project requirements
- Establish cost, schedule, list of deliverables and delivery dates
- Establish resource plan
- Establish project activities and tasks
- Get management approval and proceed to next phases

SOURCES OF PROJECT FUNDS

- Donations and grants
- Governments agencies
- Individuals
- International organization
- World bank and IMF

- Churches and missions
- Fundraising
- Contracts and sub-contracts

AREAS OF PLANNING

- Schedule (time)
- Budget (cost)
- Scope (research)
- Procurements
- Human resources (personnel)
- Quality management
- Risks
- Communication (feedback and response)

STAKEHOLDERS TO CONSIDER IN PLANNING STAGE

Each stakeholder has specific interest in the project which can be positive and negative depends on the nature of interest. They include:

- Donors/sponsors
- Customers/clients/beneficiaries
- Government and its agencies
- Organizational managers
- Community elders
- General public
- International community
- Evaluators and auditors
- Trade unions

3. IMPLEMENTATION STAGE

- It is the stage in which all planned activities are put into action and it is most difficult stage of project life cycle.

- Can be compared by this slogan: (coming together is beginning, keeping together is progress and working together is success)
- It is the most difficult phase of project management since it calls for an execution of what has been planned.
- It has to be done in an organized and systematic manner and should not be rushed.

MAIN ACTIVITIES TO BE DONE IN IMPLEMENTATION STAGE

1. Meeting with other project players (other agencies that works your field in your area of operation to avoid beneficiaries overlap)
2. Meeting with Local government officials
3. Project site selection
4. Settlement visit and meeting community representatives/leaders
5. Holding Project opening work shop
6. Developing beneficiaries selection criteria
7. Explain selection criteria with community leaders and government representatives.
8. Community sensitization & site supervision
9. Final preparation
10. Beneficiaries identification
11. Beneficiaries registration
12. Continuation of procurement process (Selection of training IP, Selection of input supplier and other procurement related activities)
13. Input distribution
14. Conducting surveys (Base line and end line surveys)
15. Preparing final project report

GOOD IMPLEMENTATION TOOLS MIGHT INVOLVE:

- Selling the idea internally
- Continues consultation and information sharing (updates)
- Making right implementation plan and procedures
- Have an excellent support system including contingency or exit strategy.

4. MONITORING AND EVALUATION

Monitoring is systematic and continuous collection, analysis and utilization of information on project achievements as implementation progresses. It is an on-going activity, taking place continuously throughout an intervention/implementation.

Evaluation is periodically process of ensuring that inputs should produce outputs that will contribute the outcome of the project.

Different types of monitoring

1. Result/Progress Monitoring
2. Process/Activity Monitoring
3. Beneficiary monitoring
4. Financial Monitoring
5. Beneficiary Monitoring

Different types of Evaluation

1. Mid-term evaluation
2. Impact Evaluation
3. Real time evaluation
4. End of project evaluation

Evaluation Criteria

1. Efficiency
2. Effectiveness
3. Relevance/Appropriateness
4. Impact

5. Coherence
6. Coverage
7. Connectedness and Sustainability

Reporting is an integral part of monitoring and evaluation. Reporting is the systematic and timely provision of essential information at periodic intervals.

Feedback is a process within the framework of monitoring and evaluation by which information and knowledge are disseminated and used to assess overall progress towards results or confirm the achievement of results.

Feedback may consist of findings, conclusions, recommendations and lessons from experience. It can be used to improve performance and as a basis for decision-making and the promotion of learning in an organization.

PURPOSE OF MONITORING AND EVALUATION

- Meet donor demand
- Improve accountability and transparency
- Concerns with sustainability
- Enhance organizational learning and management adaptability

IMPORTANCE OF MONITORING AND EVALUATION IN PROJECTS

- Helps you to identify problems and their causes
- Suggests possible solutions to problems
- Raise questions about assumptions and strategy
- Provide you with information and insights
- Encourage you to act information and insights
- Push you to reflect on where you are going and how you are getting there.
- Corrects analysis and determines information of the project inputs.

OBJECTIVES AND THE REASONS WHY WE NEED PROJECT EVALUATION

- To ensure that project objectives has been reached
- To assess the efficiency of the project

- To ensure that inputs should produce outputs that matches the need
- To assess project relevance
- To assess the effectiveness of the project

REASONS FOR THE NEED OF MONITORING

- To ensure that project is going on the right way
- To provide guidance for project implementers
- To ensure that inputs are utilized on time and correct measures are taken.
- It provides the source of information and facilitate the evaluation of the project
- To make quick corrections for any mistakes internally and externally.

HOW TO CONDUCT MONITORING AND EVALUATION

OVERALL W O R K P L A N I N G

A work plan is an annual or multi-year summary of tasks, timeframes and responsibilities. It is used as a monitoring tool to ensure the production of outputs and progress towards outcomes. Work plans describe the activities to be conducted as well as the expected outputs and outcomes.

The overall process of work planning is a comprehensive tool that helps people translates information or ideas into operational terms on an annual basis. Monitoring and evaluation are integral parts of a country office's overall work plan, which encompasses many additional areas.

MINIMUM REQUIREMENTS FOR PLANNING AT M & E STAGE

Country offices may integrate their results-oriented monitoring and evaluation planning into existing systems and structures in any number of ways. Nevertheless, as a minimum for planning, offices should:

1. Plan monitoring and evaluation simultaneously: Evaluation is an important monitoring tool and monitoring is an important input to evaluation. Because they are so interrelated, it is recommended that country offices plan monitoring and evaluation processes together at the same time.

2. Capture results (outcome and outputs): Meaningful information about outcomes and outputs needs to be captured, regardless of the unit of analysis used by a monitoring and evaluation plan (e.g. outcomes, outputs, projects, activities, themes, areas).

3. Develop an evaluation plan: An evaluation plan covers outcomes for the Country Programme period. All operating units and offices prepare a mandatory evaluation plan within the first quarter of each Country Programme cycle. This is a key element in performance assessment.

4. Base planning on a strategic choice: Planning is not primarily about scheduling (the timing and selection of tools); it is about determining the best approach depending on the needs and the nature of what is being monitored or evaluated.

PLANNING MONITORING

When planning monitoring to assess progress towards outcomes (outcome monitoring), M &E officers are encouraged to take the following steps:

1. Assess needs: This is done by assessing the nature of the outcome and/or the programmes and projects that are expected to contribute to outcome. What information is needed to assess that outcome? What elements are most important to keep track of? What would indicate progress or success?

2. Assess current monitoring: To assess current monitoring (or proposed monitoring for new projects), look at the monitoring tools being used in all of the projects and programmes intended to contribute to a given outcome. Are these tools providing the necessary information? Do they involve the key partners? Is monitoring focusing on key issues for efficiency? Are there possibilities for greater efficiency and coordination? This will help to identify gaps in the analysis as compared with the needs for this information.

3. Review monitoring scope or tools: Is there a need for additional or specific monitoring scope or tools to suit the programme or project? For example, large or complex programmes may require more details about implementation, downstream projects may require additional participation by beneficiaries, and innovative pilot

projects may generate specific lessons learned that should be captured through monitoring.

4. Adapt and/or design monitoring mechanisms: The mechanisms used should provide sufficient analysis on outcomes and close the gap, if any, between the available and the required information. For example, if steering mechanisms are being used to monitor, be sure to include partners working in the same outcome area. Or, if an outcome involves a large number of partners, add tools such as stakeholder meetings.

PLANNING EVALUATION

Evaluation is important for learning, validation of results and decision-making.

Organizations will be expected to conduct a limited number of outcome evaluations during the programming cycle, and to develop an evaluation plan for these and any other evaluations of projects, programmes or themes that the office wishes to conduct.

An evaluation plan is based on strategic and selective decisions by country offices about what to evaluate and when. The plan is then used to ensure that evaluation activities are on track. When preparing for an evaluation, it can be helpful to think in terms of "backwards planning". This means looking at the scheduled dates for an evaluation, estimating the time needed to prepare and conduct the evaluation, and then working backwards to anticipate by when the preparation process needs to begin.

THE BUILDING BLOCKS: MONITORING TOOLS AND MECHANISMS

A variety of formal and informal monitoring tools and mechanisms are available for use by country offices, including field visits, annual project reports, outcome groups and annual reviews.

Their formats and approaches are adaptable to local needs, provided the minimum content is reflected—namely progress towards outcome outputs and partnerships.

Field visits are frequently used as a monitoring mechanism. It is common policy to conduct regular field visits. Consideration should be given to the timing of the visit, its purpose in terms of monitoring, and what to look for in order to measure progress.

Timing: A field visit may be planned for any time of the year.

Purpose: Field visits serve the purpose of validation. They validate the results reported by programmes and projects, in particular for larger, key programmes and projects. They involve an assessment of progress, results and problems and may also include visits to the project management or directorate.

PROJECT FAILURE-COMMON CAUSES

- ✓ Delivered over budget (Even under budget)
- ✓ Delivered over time (Even under budget)
- ✓ Poorly managed.
- ✓ Not supported by key stakeholders
- ✓ Too many scope
- ✓ Client refusal to accept delivery
- ✓ Lack of senior management support
- ✓ Lack of sufficient time, funding and skilled resources.
- ✓ Lack of honest, transparent and accountability
- ✓ Lack of authority to actually stop the project.
- ✓ Functional conflicts between operational and project priorities.

PROJECT SUCCESS-COMMON CAUSES

- ✓ Transparent approvals, decision making and accountability.
- ✓ Real-time performance measurement and good reporting system.
- ✓ Evidence of both activity and achievement.
- ✓ User environmentally friendly projects.
- ✓ Good project manager.
- ✓ Honest project teams.
- ✓ Trained and experienced project staff.
- ✓ Good working conditions.

Case study and exercise (3)

In this case study you have been invited an interview and you are asked to provide short concept about project life cycle. Your description should include the following:

1. What project life cycle is
2. Discuss in detail the phases of project life cycle
3. Importance of monitoring and evaluation on projects
4. Assess how a project life cycle can be applied to food security and livelihood project based in Qardho.
5. What are the key documents needed at each stage?
6. Activities to be done in M&E stage
7. When will you conduct M&E

CHAPTER FOUR: FEASIBILITY STUDY

A feasibility study is an evaluation and analysis of the potential of the proposed project which is based on extensive investigation and research to support the process of decision making. Feasibility studies aim to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the environment, the resources required to carry through, and ultimately the prospects for success.

In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained.

The acronym TELOS refers to the five areas of feasibility - Technical, Economic, Legal, Operational, and Scheduling.

Technology and system feasibility

The assessment is based on an outline design of system requirements, to determine whether the company has the technical expertise to handle completion of the project. When writing a feasibility report, the following should be taken to consideration:

- A brief description of the business to assess more possible factor/s which could affect the study
- The part of the business being examined
- The human and economic factor
- The possible solutions to the problems

Legal Feasibility

Determines whether the proposed system conflicts with legal requirements, e.g. a data processing system must comply with the local Data Protection Acts

Operational Feasibility

Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development.

The operational feasibility assessment focuses on the degree to which the proposed development projects fits in with the existing business environment and objectives with regard to development schedule, delivery date, corporate culture, and existing business processes.

Economic Feasibility

The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. It includes quantification and identification of all the benefits expected. This assessment typically involves a cost-benefits analysis.

Technical Feasibility

The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the need of the proposed system.

Schedule Feasibility

A project will fail if it takes too long to be completed before it is useful. Typically this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Schedule feasibility is a measure of how reasonable the project timetable is. Given our technical expertise, are

the project deadlines reasonable? Some projects are initiated with specific deadlines. You need to determine whether the deadlines are mandatory or desirable.

FEASIBILITY STUDY INITIATION

The lead to the feasibility study (from client's perspective) is the formalizing of the project with the project charter. The project charter outlines the purpose of the project and what it is meant to achieve. Likewise the feasibility study should be formulized with the requirements, boundaries and expected outcomes:

- ✓ Who is responsible
- ✓ Project brief to be analyzed
- ✓ Who should be involved
- ✓ Level of detail
- ✓ Budget for the feasibility study
- ✓ Report back date

At this point senior managements have only made decision to proceed with the feasibility study. It is senior management responsibility to select the project manager for the feasibility study. It is then project manager's responsibility to select the feasibility study team. It is most important that the team membership should include a representative of the future operators. This will encourage them to have an input into the design and certain amount of control over their destiny. The company or organization should make sure that the team members have sufficient time to develop the new product.

Stakeholder Analysis

The purpose of the needs analysis is to determine the needs and expectations of all the stakeholders.

Project stakeholders are people and organizations who are either actively involved in the project or whose interests may be effected by the project being implemented.

It is the project's manager responsibility to identify all the stakeholders and determine their needs and expectation. These needs and expectation should then be managed, influenced and balanced, to ensure project success.

The project manager should create an environment where the stakeholders are encouraged to contribute their skills and knowledge as this may influence the success of the project. Consider the following headings:

1. Originator: the person who suggests the project.
2. Owner: the person whose strategic plan creates the need for the project.
3. Sponsor: the person or company who donates project budget.
4. Users: the people who will operate the facility on behalf of the owner when the project is completed.
5. Customers/beneficiaries: the people who receive for the benefit of the project.
6. Project team: the team members who plan. Organize, implement and control the work of the project implementation.
7. Senior management: within your organization who will be supplying the workforce of your project (mentor support and coaching)
8. Sub-contractors: the external companies or people offering specialist expertise to supplement the organization's resources.
9. Suppliers and vendors: The external companies or people who will supply materials and equipment.
10. Legal requirement: rules and regulations both nationally and internationally that must be complied with.

DEFINE CLIENT'S NEEDS

The starting point for a project is usually to address a problem, need or business opportunity that may be internal or external to your company/organization. The sponsor

may start a project to implement a change, make a product, and enter new market or solve problem. Some of the objectives may be stated as:

- ✓ The project must have working life of so many years.
- ✓ The project must meet certain specifications and standards.
- ✓ The project must be provided opportunities for future expansions.

EVALUATE CONSTRAINTS

Project constraints can be considered as internal or external restrictions that may affect the achievable scope of the project. These anticipated limitations can be classified as follows:

1. Internal Project Constraints: this relates directly to the scope of the project and asks basic questions about the product/ project.
    i. Can product be made? Can the organization meet the specification?
    ii. Does the organization have the technology?
    iii. Do we have enough resource?
    iv. Can the project be completed within budget and time?
2. External Project Constraints: these are things imposed by parties outside the organization and the project's sphere influence. Many of these constraints may not be negotiable. These include:
    i. National and international laws and regulations.
    ii. Material and component deliveries lead times.
    iii. Unavailable resources.
    iv. Currency fluctuations.
    v. Climatic conditions.
    vi. Market force (supply and demand curve)

COST-BENEFIT ANALYSIS

A cost-benefit analysis may be performed at this stage to establish the financial feasibility of the project. The basic concept is to express the cost and benefit in terms

of money. A cost-benefit analysis is generally based on the following economic principle:

- ✓ Pareto improvement criteria: states “The project should make some people better off without making any one else worse off”.
- ✓ Hicks-Kaldor: states “ The aggregate gains should exceed aggregate loss”
- ✓ Willingness-to-pat test: determines how much your clients are prepared to pay for your product.

These techniques will model the relationship between supply, demand and process. with the presentation of the feasibility study to senior management, so ends mini project. This concludes the feasibility study chapter; the following chapter will discuss Project selection and change.

Case study and exercise (4)

The feasibility study offers the project manager and management team a framework to assess the feasibility of a project against predefined parameter. Consider public private partnership (PPP) to select project:

- Refurbish and operate the underground hotel
- Build and operate Qardho bridge
- Build and operate a power station

For your selected project structure your presentation (written or verbal) to include the following:

1. Identify your key stakeholders and determine their influence on the project.
2. Your client is the key stakeholders; identify their needs and how the project will fulfill their needs.
3. Identify any internal and external constraints that will affect your project.
4. The economists say if the “aggregate gains exceed the aggregate loss” then the project passes their test. How can this be applied to your project?

Chapter FIVE: LOGICAL FRAMEWORK APPROACH (LFA)

INTRODUCTION

This Chapter introduces the Logical Framework Approach and its role in projects.

Logical Framework Approach is project design and implementation tool, which allows for a systematic and logical way of setting the project's objectives and activities.

Logical Framework Approach is methodology for planning, managing and evaluating programmes and projects, involving problem analysis, analysis of objectives, strategy analysis, and preparation of the logframe matrix and activity and resource schedules.

The Logical Framework Approach is the main tool used for project design during the Identification and Planning phases of the project cycle. Using the LFA during Identification helps to ensure that project ideas are relevant, while during planning it helps to ensure feasibility and sustainability of the project.

The approach is split into two phases:

Phase 1 - the Analysis Phase during which the existing situation is analyzed to develop a vision of the 'future desired situation' and to select the strategies that will be applied to achieve it.

Phase 2 – the Planning Phase during which the project idea will be developed in operational detail.

PHASE 1 ANALYSIS PHASE

Projects are designed to address the problems faced by beneficiaries. A properly planned project addressing the real needs of the beneficiaries cannot be achieved without an analysis of the existing situation. However, the existing situation is likely to be perceived in different ways by different groups of stakeholders. Thus it is important to bring together representatives of all key stakeholders in the Analysis Phase. This is usually done in a workshop environment where problems and issues are discussed openly. There are three stages to the Analysis Phase: Problem Analysis; Analysis of Objectives; Strategy Analysis.

1.1 Problem Analysis

Problem analysis identifies the negative aspects of an existing situation and establishes the 'cause and effect' relationships between the problems that exist. It involves three steps:

1. Identification of the stakeholders affected by the proposed project
2. Identification of the major problems faced by beneficiaries
3. Development of a problem tree to establish causes and effects

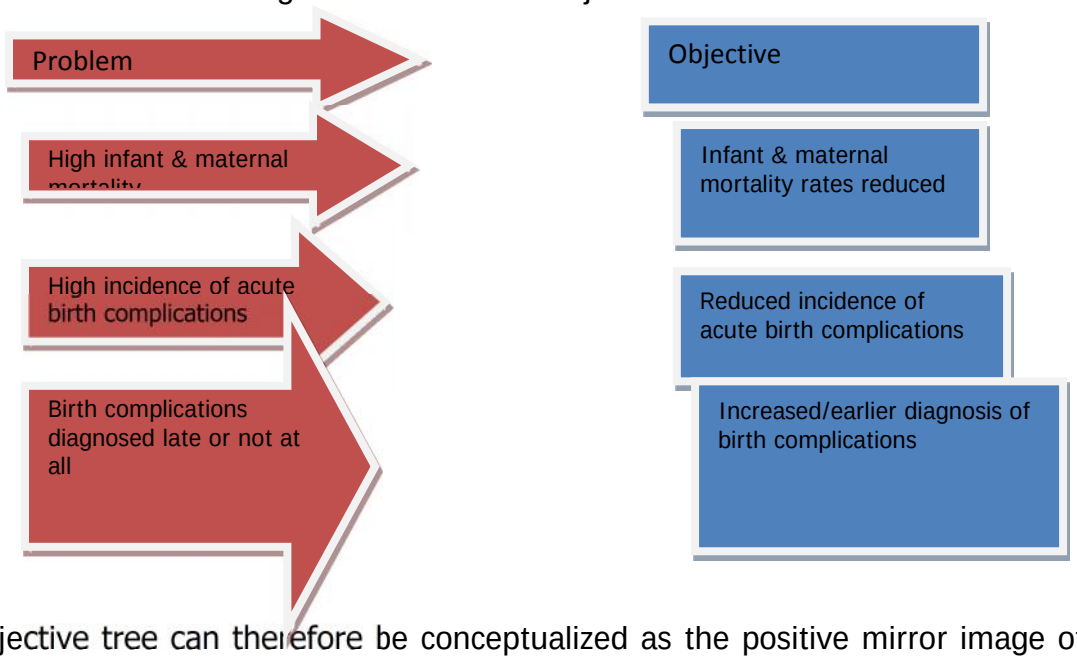
There are two common difficulties that are experienced during problem identification and analysis: inadequate problem specification, and the statement of 'absent solutions':

- ✓ In adequate problem specification occurs when a problem is specified in insufficient detail so that it does not communicate the true nature of the problem. Statements such as 'Poor management' need to be broken down so that we understand what the problem is, and can therefore analyze the underlying causes - for example, the management problems might include poor financial control, late delivery of key services, etc. Of course, getting the level of detail right is a matter of judgment on the part of the workshop moderator and the participants. It will also depend on the scope and nature of the project.
- ✓ Absent solutions are problem statements that do not describe the current negative situation, but describe the absence of a desired situation. For example, 'Lack of trained staff' does not describe the specific problem (staff have insufficient or inappropriate skills), and risks biasing the intervention towards the absent solution ('training') when in fact it might be an issue of recruitment or personnel management.

1.2 Analysis of Objectives

While problem analysis presents the negative aspects of an existing situation, analysis of objectives presents the positive aspects of a desired future situation. This involves the reformulation of problems into objectives.

Figure 5.2: Transforming Problems into Objectives



The objective tree can therefore be conceptualized as the positive mirror image of the problem tree, and the 'cause and effect' relationships become 'means to end' relationships. It may be found that there are gaps in the logic of the initial objective tree that were not apparent in the problem tree, therefore the 'means-ends' linkages between objectives should be reviewed and reorganized as necessary. Finally, objectives dealing with a similar topic can be grouped together in clusters, which will provide the basis for Strategy Analysis. Once complete, the objective tree provides a comprehensive picture of the future desired situation:

1.3 Strategy Analysis

The final stage of the analysis phase involves the selection of the strategy (ies) which will be used to achieve the desired objectives. Strategy analysis involves deciding what objectives will be included IN the project, and what objectives will remain OUT, and what the project purpose and overall objectives will be. In addition to examining the logic, strategy analysis also looks at the feasibility of different interventions.

Depending on the scope and amount of work entailed, the selected clusters or strategy may form a 'project-sized' intervention, or a programme consisting of a number of projects. In the example above, our project will address the primary and secondary

healthcare strategies, but not the nutritional awareness strategy that is dealt with by another project.

PHASE 2 PLANNING PHASE

The main output of the LFA is the logframe matrix. The logframe sets out the intervention logic of the project and describes the important assumptions and risks that underlie this logic. This provides the basis for checking the feasibility of the project. For management and supervision of projects, the logframe defines the tasks to be undertaken, the resources required, and the responsibilities of management. In the second and third columns (objectively verifiable indicators, and sources of verification), the logframe provides the framework against which progress will be monitored and evaluated.

.1 The Logframe Matrix

The logframe is the main output of the LFA.

Logframe is the matrix in which a project's intervention logic, assumptions, objectively verifiable indicators and sources of verification are presented.

The logframe, for all its advantages when clearly understood and professionally applied, provides no magic solution to identifying or designing good projects. The principle of 'garbage in, garbage out' can apply to the logframe if it is used mechanistically. When used properly the logframe helps to make the logical relationships between activities, results, purpose and objectives more transparent, at least to the informed user.

By bringing stakeholders together during the analysis phase, to discuss problems, objectives and strategies, the LFA encourages people to consider what their own expectations are, and how these might be achieved. By stating objectives clearly and setting them out in a 'hierarchy of objectives', it then provides a means of checking the internal logic of the project plan, ensuring that activities, results and objectives are linked. Planners are forced to identify the critical assumptions and risks that may affect project feasibility, and to specify the indicators and sources of information that will be used to monitor and evaluate the project. All of this key information is brought together in one document that provides a useful summary.

While the LFA has proven to be a useful planning and management tool, it is not a comprehensive tool and does not guarantee project success. The process is time-consuming and requires considerable training in the concepts and logic of the approach. Planners are required to summarize complex ideas and relationships into simple phrases that may be unclear or meaningless. All too often the caricature “fill-in-the-boxes” approach is used to complete the logframe matrix during project design, leading to a poorly prepared project with unclear objectives and a lack of ownership of the project among stakeholders.

The Logframe itself consists of a table, or matrix, which has four columns and (in its most basic form) four rows. The vertical logic identifies what the project intends to do, clarifies the causal relationships and specifies the important assumptions and uncertainties beyond the project manager’s control. The horizontal logic relates to the measurement of the effects of, and resources used by, the project through the specification of key indicators of measurement, and the means by which the measurement will be verified.

2.1 Levels of Objectives

The objectives selected for inclusion in the project are transposed into the first column of the Logframe, and set out the intervention logic of the project. Description of the aim of a project or programme, in its generic sense it refers to activities, results, project purpose, overall objectives and goals .During this stage it is important to ensure that the levels of objectives are correct:

1. The Overall Objectives of the programme should explain why the programme is important to society, in terms of the longer-term benefits to beneficiaries and the wider benefits to other groups.
2. The Project Purpose should address the core problem, and be defined in terms of the benefits to be received by the project beneficiaries or target group as a result of utilizing the services provided by the programme.
3. Results describe the services to be delivered to the intended beneficiaries or target group, and it should be possible for project management to be held

accountable for their delivery. The results should address the main causes of the problems the target group faces. To ensure relevance of results, the problem analysis should therefore have identified a beneficiary demand for project services. The outputs produced by undertaking a series of activities. The results are what the project will have achieved by its completion date.

4. Activities the specific tasks to be undertaken during a project's life in order to obtain results.

One of the keys to using the logframe successfully understands what the definitions mean in operational terms, and in particular the relationship between Results and Project Purpose.

THE INTERVENTION LOGIC

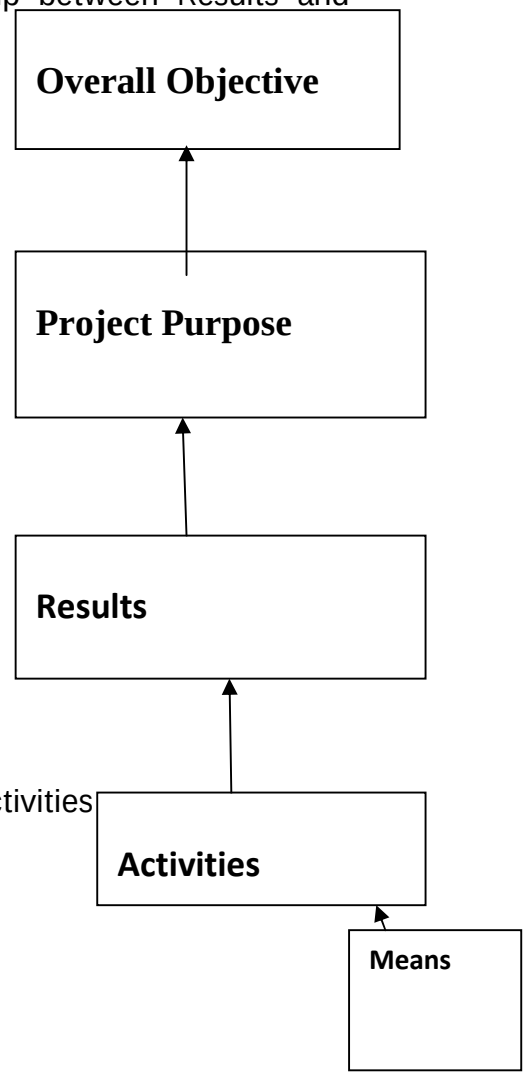
High-level objective to which
The intervention contributes.

Objective aimed at by the intervention itself

Products of the activities
that lead to the project purpose

What the project is going to do and how

Physical and non-physical means necessary to undertake the activities



2.2 Assumptions it will have become apparent during the Analysis Phase that the project alone cannot achieve all objectives identified in the objective tree. Once a strategy has been selected, objectives not included in the intervention logic and other external factors remain. These will affect the project's implementation and long-term sustainability but lie outside its control. These conditions must be met if the project is to succeed, and are included as assumptions in the fourth column of the Logframe.

2.3 Objectively Verifiable Indicators (OVIs): Objectively Verifiable Indicators describe the project's objectives in operationally measurable terms, & provide the basis for performance measurement. The specification of OVIs acts as a check on the viability of objectives and forms the basis of the project monitoring system. Once the indicator has been identified, it should then be developed to include brief details of quantity, quality and time (QQT).

Example: Ensuring that OVIs are Specific- Defining Indicators - QQT

Objective: Health status improved

- ✓ Set quality (the nature of the indicator): mortality rates reduced
- ✓ Set target group (who): infant mortality rates reduced
- ✓ Set place (where): infant mortality rates reduced in north-west province
- ✓ Set quantity: infant mortality rates in north-west province reduced from X to Y
- ✓ Set time: infant mortality rates reduced in north-west province from X to Y by the year 2005

Objectively verifiable means that different persons using the indicator would obtain the same measurements, this is more easily done for quantitative measures than for those that aim to measure qualitative change. It is often useful to include more than one indicator if the single indicator does not provide a full picture of the change expected. At the same time, the trap of including too many indicators should be avoided, as this will add to the work and the cost of collecting, recording and analyzing the data.

2.4 Sources of Verification (SOVs): When indicators are formulated, the source of information and means of collection should be specified. This will help to test whether

or not the indicator can be realistically measured at the expense of a reasonable amount of time, money and effort. The SOV should specify:

- ✓ The format in which the information should be made available (e.g. progress reports, project accounts, project records, official statistics etc.)
- ✓ Who should provide the information
- ✓ How regularly it should be provided. (e.g. monthly, quarterly, annually etc.)

Sources outside the project should be assessed for accessibility, reliability and relevance. The work and costs of collecting information to be produced by the project itself should also be assessed, and adequate means provided. Other indicators should replace those for which suitable SOVs cannot be found. If an OVI is found too expensive or complicated to collect, it should be replaced by a simpler, cheaper OVI.

2.4 Means and Costs: 'Means' are the human, material and financial resources required to undertake the planned activities and manage the project. In order to provide an accurate estimate of the means and costs required for a project, planned activities and management support activities must be specified in sufficient detail. An area for particular attention is the cost of collecting data on OVIs.

PROJECT LOGIC ELEMENTS

Input- is what goes the project Example-funds, time, materials and ideas.

Activities-it is what the process in which outputs can be reached example, construction of school.

Output-it is the immediate result of the activities being implemented; usually they are achieved making the activities past tense example, school construction completed.

Outcome-it is what output result translates into its effect brought about the output example access to school enrollment.

Impact-is a process that you know whether or not what you did make difference to the problem you were trying to address example, reduction of illiteracy level.

An Example of a Completed Logframe

	Intervention Logic	Objectively Verifiable Indicator (OVI)	Source of Verification (SOV)	Assumptions
Overall Objective	Infant & maternal mortality rates reduced	Mortality rates reduced for under-1s, under-5s & pregnant & nursing mothers from X to Y by 19xx	Dept of Health statistics, analyzed ex-ante, midterm & ex-post	
Project Purpose	Health status of pregnant & nursing mothers, infants & babies improved.	Incidence of post-partum & neonatal infection within health centers reduced from X to Y by 19xx	Hospital & clinic records, analyzed ex-ante, midterm & ex-post	Incidence of infectious diseases in the household reduced.
Results	Functioning primary healthcare service established at district level.	Number of villages provided with regular PHC services increased from X to Y by 19xx	Clinic attendance records, analyzed quarterly	Pregnant & nursing mothers able to access cash to pay for treatment.
Activities	1. Rehabilitate/replace mobile clinic vehicles & equipment. 2. Design & implement mobile clinic programme. 3. Recruit & train village birth attendants. 4. Rehabilitate staff housing. 5. Recruit new staff.	Technical Assistance Equipment Medical supplies	Lump sum costs Reimbursable	Department of Health maintains level of funding at Pre-project levels in real terms. Suitably qualified staff willing to work in rural areas.

FORMAT - PUCTAD LOGICAL FRAMEWORK 2012 (Example two)

Project name:

PUCTAD Project code:

Intervention Logic	**Objectively Verifiable Indicators (OVI)**	**Sources of Verification (SOV)**	**Assumptions**
PRINCIPAL OBJECTIVE / GOAL • The higher-level objective/goal that the project/programme is meant to contribute to in the long run. • The project can only contribute to the achievement of the Principle Objective/Goal. • Only one Principle Objective/Goal per logframe!	• Indicator not needed in relation to Principle Objective/Goal.		
SPECIFIC PROJECT OBJECTIVE / PURPOSE • The objective to be achieved by implementing the project, BUT is outside the direct control of project management. • Must be defined in terms of benefits for the target group(s). • Must contribute significantly to fulfillment of the Principal Objective/Goal. • Only one Specific Objective/Purpose.	• Measures (direct or indirect) to verify to what extent the purpose are fulfilled. • Indicators describe the project's/programme's objective/purpose in measurable terms. • A good indicator must be SMART: *-Specific* *-Measurable* *-Available* *-Relevant* *- Timed*	• The information sources that will be used to assess the success/impact of a project/programme, i.e. where PUCTAD plans to find information on whether the project has had the intended result and impact.	• External factors o the project/program management and i as to which extent t the project/program • As with indicators closely.
RESULTS / OUTPUTS • The results that the project management can be held accountable for and should be able to guarantee. • The Results/Outputs must together lead to achievement of the Specific Objective. • Relate to target group(s) where possible. • Should be numbered (1, 2, 3, ….)	• Same as above, but each Result/Output should have its own indicator.	• Same as above.	• Same as above.

ACTIVITIES	**MEANS / INPUTS**	**COSTS**	**ASSUMPTIONS**
• The activities/actions that have to be undertaken by the project in order to produce the Results/Outputs. • All essential Activities to be included • One or more Activities per Result. • Should be numbered in relation to the numbers assigned to the various Results/Outputs (1.1, 1.2,… 2.1, 2.2, … 3.1, 3.2, 3.3, …..)	• Human and material resources necessary to carry out planned Activities and to manage the project/programme.	• The Means translated into financial terms (main budget lines only). • Should include costs for collection of data on OVIs.	• Same as above. **PRECONDITIONS** • Conditions that ha project/programme

CHAPTER SUMMARY

- ✓ To properly assess the real needs of the beneficiaries and to take account of the differing views of different groups of stakeholders it is important to bring together representatives of all key stakeholders in the Analysis Phase. A gender-integrated approach is necessary to ensure that project design is consistent with the differing roles and needs of men and women.
- ✓ The main output of the LFA is the logframe matrix. The logframe sets out the intervention logic of the project (if activities are undertaken, then results will be achieved, then project purpose, etc.) and describes the important assumptions and risks that underlie this logic. With objectively verifiable indicators and sources of verification, the Logframe provides the framework against which progress will be monitored and evaluated.
- ✓ The LFA is not a comprehensive tool and does not guarantee project success. All too often the caricature "fill-in-the-boxes" approach is used to complete the Logframe matrix during project design, leading to a poorly prepared project with unclear objectives and a lack of ownership by project stakeholders.
- ✓ It is important to ensure that the levels of objectives are correct:

- Overall Objectives - the wider sectoral or national programme objectives to which the project is designed to contribute.

- Project Purpose - the sustainable benefits to be delivered to the project beneficiaries, institution or system.

- Results - the services to be provided by the project.

- Activities - how the project's goods and services will be delivered.
  - ✓ External factors, which will affect the project's implementation and long-term sustainability but lie outside its control, are included as assumptions in the fourth column of the Logframe. The probability and significance of these assumptions being met should be estimated as part of assessing the riskiness of the project.
  - ✓ Experience demonstrates that the longer-term sustainability of benefits depends on factors such as: policy support; appropriate technology; institutional and management capacity; economic and financial viability; gender and socio-cultural factors; and environmental protection.
  - ✓ The role of Objectively Verifiable Indicators is to describe the overall objective(s), project purpose and results in operationally measurable terms. The specification of OVIs acts as a check on the viability of objectives and forms the basis of the project monitoring system.
  - ✓ Intervention Logic The strategy underlying the project. It is the narrative description of the project at each of the four levels of the 'hierarchy of objectives' used in the Logframe.
  - ✓ Logframe The matrix in which a project's intervention logic, assumptions, objectively verifiable indicators and sources of verification are presented.
  - ✓ Objectively Verifiable Indicators (OVI) Measurable indicators that will show whether or not objectives have been achieved at each level of the Logframe hierarchy. OVIs provide the basis for designing an appropriate monitoring system.
  - ✓ Problem Analysis A structured investigation of the negative aspects of a situation in order to establish causes and their effects.
  - ✓ Project Purpose The central objective of the project in terms of sustainable benefits to be delivered to the project beneficiaries. It does not refer to the services provided by the project (these are results), nor to the utilization of these services, but to the benefits which project beneficiaries derive as a result of using project services.

- ✓ Results The outputs produced by undertaking a series of activities. The results are what the project will have achieved by its completion date.
- ✓ Risks, Constraints & Assumptions External factors which could affect the progress or success of the project, but over which the project manager has no direct control.
- ✓ Sources of Verification The means by which the indicators or milestones will be recorded and made available to project management or that evaluating project performance.
- ✓ Stakeholder Individuals or institutions with a financial or intellectual interest in the results of a project.
- ✓ Strategy Analysis Critical assessment of the alternative ways of achieving objectives, and selection of one or more for inclusion in the proposed project.
- ✓ Works plan The schedule which sets out the activities and resources necessary to achieve a project's results and purpose.

Case study and exercise (5)

You have been appointed the project manger of local NGO called PUCTAD and you are responsible for preparing and designing project proposals using LFA. By the end of year 2013 there was a call for proposals presented by international donors, and you need to write a proposal titled "improving food security and livelihood for vulnerable IDPs and host community". Briefly explain how you will describe the following terms using Logframe matrix:

1. Overall objectives of the project.
2. Activities to be done during the project.
3. The stakeholders involved in the project.
4. Risks, Constraints & Assumptions of the project.

Chapter SIX: PROJECT SELECTION TECHNIQUES

The selection of the right project for future investment is a crucial decision for the long-term survival of an organization/company. The selection of the wrong project may well precipitate project failure leading to company liquidation. This chapter on project selection techniques will outline a framework for evaluating and ranking prospective projects using numeric and non-numeric methods.

Project selection is making a commitment for the future. The execution of a project will tie up company resources and as an opportunity cost, the selection of project may preclude your organization from pursuing another project.

We live in a world of finite resources and therefore cannot carry out all the projects we may want or need. Therefore a process is required to select and rank projects on the basis of beneficial change to your organization/company.

PROJECT SELECTION MODELS

Two models are usually used:

1. Numeric models: This usually financially focused and quantifies the project in terms of time to repay the investment (paypack) or return of investment.
2. Non-numeric models: considers project selection in terms of market share. Risks, client retention, move to a new field or environmental issues.

   The main purpose of these models is to aid decision-making leading to project selection. When choosing a selection model the points to consider are:

   - ✓ Realism
   - ✓ Capability
   - ✓ Ease of use
   - ✓ Flexibility
   - ✓ Cost effectiveness
   - ✓ Company mission

Market considerations

- ✓ Number of potential users
- ✓ Market share
- ✓ Customer acceptance
- ✓ Environmental relationship
- ✓ Ability to control the quality of the project.

Financial considerations

- ✓ Cost of new system
- ✓ Payback period
- ✓ NPV
- ✓ IRR
- ✓ Cost of implementation
- ✓ Cost of trainings
- ✓ Level of financial risk

Personnel consideration

- ✓ Skills requirement
- ✓ Training requirements
- ✓ Employment requirements
- ✓ Impact on working conditions
- ✓ Effect on job descriptions

NUMERIC MODELS

The numeric selection models presented here may be subdivided into financial and scoring models. The financial models include:

- ✓ Payback period
- ✓ Net present value (NPV)

- ✓ Return on investment (RIO)
- ✓ Internal rate of return

PAYBACK PERIOD

The payback period (PB) is the time taken to gain financial return equal to the original investment. It is used to determine at what point in time or in which year the project will recover its cost. It is the most commonly used selection technique.

Formula

PB: Initial cost/Annual cash inflows

Example 1: if project requires cash flow $ 10,000 and generate cash inflows as follows:

First year: $ 2,000

Second year: $ 4, 000

Third year: $ 4,000

Fourth year: $ 2,000

So what is the payback period?

Solution:

PBP: Initial cost/Annual cash flows

Average inflows= 2000+4000+4000+2000/4yrs=3000

PBP= 10000/3000= 3.3 (3 years and 3 months)

ADVANTAGES OF PAYBACK PERIOD

- ✓ Easy to calculate
- ✓ It uses readily available accounting data to determine each cash flow.

DISADVANTAGES OF PAYBACK PERIOD

- ✓ Can be biased for projects with early high returns.
- ✓ It does not consider the whole life of the project.
- ✓ It does not consider the time value of money

RETURN ON INVESTMENT (time value of money)

Another popular investment appraisal technique that does look at the whole project is ROI. This method first calculates the average annual profit using following formulas:

Average annual profit: Total gains –total outlay/Number of years

Return on investment: Average annual profit/Original investment*100/1

Example 2: using machine selection project calculate the ROI.

Year	Cash-flow machine A	Cash-flow machine B
0	($35000)	($35,000)
1	$20,000	$10,000
2	$15,000	$10,000
3	$10,000	$15,000
4	$10,000	$20,000
Total Gains	$55,000	$55,000

Profit (A&B) = $55,000-$35,000=$20,000

Annual profit= $20,000/4 yrs=$5000 per year

ROI= $5000/$35,000*100/1= 14%

Money received today is preferred to money to be received tomorrow because:

1. Uncertainty: people are not sure of getting money in the future.
2. Inflation: The money is most likely to lose value.

3. Perceived opportunity cost: people perceived that opportunity cost of future money cannot be compared to today.

Time value of money is incorporated into financial analysis into two ways:

1. Compound method: is used o calculating the future value of money today.
2. Discounted value: is used to calculate the present value of money.

Formulae

$FV = PV (1+r)^n$

$PV = FV/ (1+r)^n$

Example 3: determine future value of $800 and rate is 5% per annum, after two years.

$FV = PV (1=r)^n$

$= 800(1+0.05)^2 = \$882$

SCORING MODELS

The numeric models discussed so far all have common limitations; they only look at the financial element of the project. In an attempt to broaden the selection criteria a scoring model called the factor model, which uses multiple criteria to evaluate the project has been introduced.

The factor model simply lists a number of desirable factors on a project selection Performa along with columns for SELECTED and NOT SELECTED. The factors can be waited simply I to 5 to indicate very poor, poor, fair, good and very good respectively a.

Factors	Select	Do not select
Profit>20%		
Increase market share		

No outside consults required		
Payback period < 2 years		
Offer good customer service		

Scoring model Template

THE ADVANTAGES OF USING SCORING MODEL INCLUDE:

- ✓ Encourage objectively in decision making.
- ✓ Using multiple selection criteria to widen the range of evaluation.
- ✓ Simple structure and easy to use.

THE DISADVANTAGES OF USING SCORING MODEL INCLUDE:

- ✓ A simple method may encourage the development of long lists that could introduce trivial factors and therefore waste management time.
- ✓ If factors are not weighted they will assume equal importance.

OTHER CHARACTERISTICS OF SUCCESSFUL PROJECTS

- Cost: at project completion, no more money has been spent than was originally allocated
- Schedule: The project is delivered no later than the original delivery date
- Performance: When delivered, the project has all features and functionality that were originally required of it.

Checklist Project Selection Model

- ✓ Strategy alignment: What specific organization does this project align with?
- ✓ Driver: What business problem does the project solve?

- ✓ Success metrics: How will we measure success?
- ✓ Sponsorship: Who is the project sponsor?
- ✓ Risk: What is the impact of not doing this project?
- ✓ Benefits: What is the value of the project to this organization?
- ✓ Organization culture: Is our organization culture right for this type of project?
- ✓ Approach: Will we build or buy?
- ✓ Training/resources: Will staff training be required?
- ✓ Finance: What is estimated cost of the project?
- ✓ Portfolio: How does the project interact with current projects?

Case study and exercise (6)

The selection of the right project may be the single most important consideration which determines success or failure of the project. Outline how your organization selects projects and give example of how the following are considered:

1. Departmental considerations.
2. Payback period.
3. Discounted cash flow using present forecast rate of investment.

Chapter 7: PROJECT ESTIMATION (TIME AND COST)

For the project manger to be effectively plan and control a project, accurate estimating is essential. The estimator's task is to predict the project's parameters by building a model of the project on paper. The quality and accuracy of the estimate should be seen as the best approximation based on:

- ✓ Time available
- ✓ Information available
- ✓ Techniques employed
- ✓ Expertise and experience of the estimators

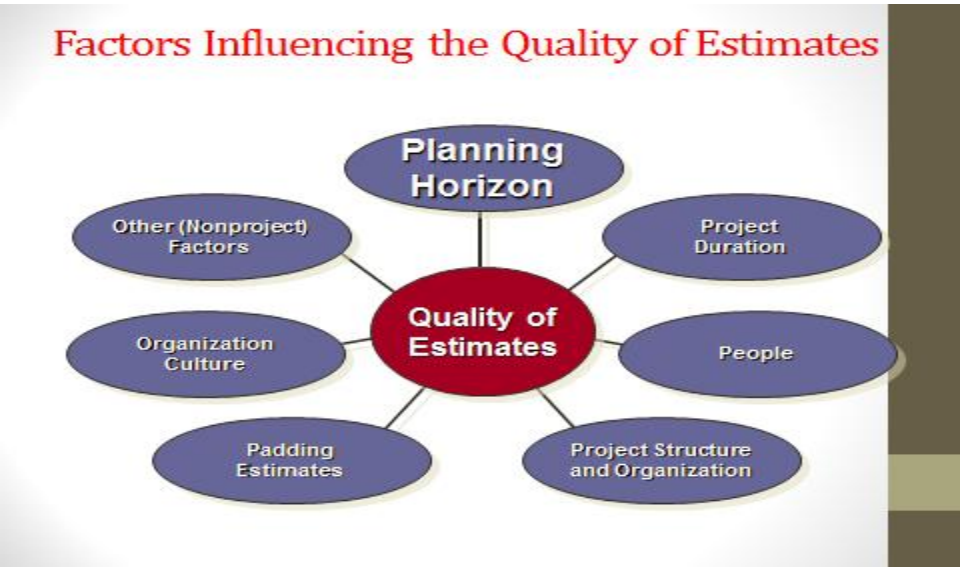
Although estimating usually focuses on the financial aspects of the project, it is important to remember that the costs cannot be accurately established until the factors of scope, specification, time, resources, materials, equipment and risks have been measured.

Estimating is the process of forecasting or approximating the time and cost of completing project deliverables.

WHY ESTIMATING TIME AND COST ARE IMPORTANT

- Estimates are needed to support good decisions.
- Estimates are needed to schedule work.
- Estimates are needed to determine how long the project should take and its cost.
- Estimates are needed to determine whether the project is worth doing.
- Estimates are needed to develop cash flow needs.

Factors Influencing the Quality of Estimates



Estimating Guidelines for Times, Costs, and Resources

1. Have people familiar with the tasks make the estimate.
2. Use several people to make estimates.
3. Base estimates on normal conditions, efficient methods, and a normal level of resources.
4. Use consistent time units in estimating task times.

Methods for Estimating Project Times and Costs

- Macro (Top-Down) Approaches
    - Consensus methods
    - Ratio methods
    - Apportion method
    - Function point methods for software and system projects

- Learning curves

- Micro (Bottom-Up) Approaches
  - ✓ Template method
  - ✓ Parametric procedures appliedto specific tasks
  - ✓ Detailed estimates for the WBS work packages
  - ✓ Phase estimating: A hybrid

ANALYSIS OF COST ESTIMATING

This section reviews the elements of estimation and techniques for improving estimates. The objective of cost estimating is to develop estimates for the costs needed for a resource to complete the project tasks and activities. Inputs to estimation include the project's Scope Statement and Work Breakdown Structure (WBS). These items define the work to be done and allow a foundation on which estimates can be made. Common methods to develop estimates are by comparing the project to previous efforts, using historical data and statistical models, or bottom-up estimation with each task. The more information that is available, the more accurate the estimate can be.

Accurate estimates however are not based solely on data and methods. There are other inputs and factors to take into account.

A crucial element in successful competitive standing is the ability to generate quick and accurate cost estimates.

To produce effective and realistic estimates more has to be taken into consideration such as the current project environment, risks and risk management, and customer psychology.

In order to produce an effective estimate the Project Manager or individual responsible for ultimately delivering estimation needs to master techniques in multiple facets of the estimation process. Communication An accurate estimate is not an effective estimate if the scope of the work that is being estimated is incomplete or misunderstood. And

while changes to the project can be facilitated through change management later in the project, this is not an optimal approach. Estimates that are based on clear and open communication of all aspects of the project, and with full understanding, are essential.

HOW TO ESTIMATE PROJECT COSTS

In a world of limited funds, as a project manage you're constantly deciding how to get the most return for your investment. The more accurate your estimate of project cost is, the better able you will be to manage your project's budget. Therefore, estimating a project's costs is important for several reasons:

- It enables you to weigh anticipated benefits against anticipated costs to see whether the project makes sense.
- It allows you to see whether the necessary funds are available to support the project.
- It serves as a guideline to help ensure that you have sufficient funds to complete the project.

Although you may not develop and monitor detailed budgets for all your projects, knowing how to work with project costs can make you a better project manager and increase your chances of project success.

A project budget is a detailed, time-phased estimate of all resource costs for your project. You typically develop a budget in stages — from an initial rough estimate to a detailed estimate to a completed, approved project budget. On occasion, you may even revise your approved budget while your project is in progress.

Project budgets include both direct and indirect costs.

1. Direct Costs are those costs that can be specifically identified with an activity or

Direct costs include the following:

- Salaries for team members on your project
- Specific materials, supplies, and equipment for your project
- Travel to perform work on your project
- Subcontracts that provide support exclusively to your project

2. Indirect costs fall into the following two categories:

- Overhead costs: Costs for products and services for your project that are difficult to subdivide and allocate directly. Examples include employee benefits, office space rent, general supplies, and the costs of furniture, fixtures, and equipment.

  You need an office to work on your project activities, and office space costs money. However, your organization has an annual lease for office space, the space has many individual offices and work areas, and people work on numerous projects throughout the year. Because you have no clear records that specify the dollar amount of the total rent that's just for the time you spend in your office working on just this project's activities, your office space is treated as an indirect project cost.

- General and administrative costs: Expenditures that keep your organization operational (if your organization doesn't exist, you can't perform your project). Examples include salaries of your contracts department, finance department, and top management as well as fees for general accounting and legal services.

Suppose you're planning to design, develop, and produce a company brochure. Direct costs for this project may include the following:

- Labor: Salaries for you and other team members for the hours you work on the brochure
- Materials: The special paper stock for the brochure

- Travel: The costs for driving to investigate firms that may design your brochure cover
- Subcontract: The services of an outside company to design the cover art

Indirect costs for this project may include the following:

- Employee benefits: Benefits (such as annual, sick, and holiday leave; health and life insurance; and retirement plan contributions) in addition to salary while you and the other team members are working on the brochure
- Rent: The cost of the office space you use when you're developing the copy for the brochure
- Equipment: The computer you use to compose the copy for the brochure
- Management and administrative salaries: A portion of the salaries of upper managers and staff who perform the administrative duties necessary to keep your organization functioning

Other project Costs

- ✓ Transport costs
- ✓ Procurements costs
- ✓ Variable costs

Adjusting Estimates

- o Time and cost estimates of specific activities are adjusted as the risks, resources, and situation particulars become more clearly defined.

Changing Baseline Schedule and Budget

- o Unforeseen events may dictate a reformulation of the budget and schedule.

Creating a Database for Estimating

- Estimation software
- Data base management system

ESTIMATING PROBLEMS

The following list is a collection of points to be considered when estimating. Some of the common pitfalls to aware of include:

- ✓ Misinterpreting the scope of work and omissions.
- ✓ Risks and uncertainties are not considered.
- ✓ Poorly defined or an overly optimistic schedule
- ✓ Inflation on long term project not considered.

Case study and exercise (7)

Estimating techniques enable you to produce a reasonable accurate estimate quickly and efficiently. Although most companies set out to follow a tender schedule, when "push comes shovel", many contracts are decided at the last minute, in which case it is essential to be able to respond quickly with an a accurate estimate. Outline number of estimating techniques you have developed in your line of work which enable you to respond accurately and quickly to a client's enquiry. Your presentation (written or verbal) should consider the following:

1. The range of estimates, noting the accuracy, the time to produce and the cost to produce.
2. Separating direct costs from indirect costs which you need to calculate overtime and crashing.
3. The material procurement costs presented as a percentage
4. Project office costs.

CHAPTER EIGHT: PROJECT TEAM

Project team can be defined as a number of people who work closely together to achieve shared common goal.

Group is two or more individuals interacting and interdependent, who have come together to achieve particular objectives.

A team implies a number of people working together to achieve result while group implies collection of individuals, although they may be working on the same project, do not necessarily interact with each other.

The PMBOK defines team development as both enhancing the ability of stakeholders to contribute as individuals as well as enhancing the ability of the team to function as team. Effective teamwork is generally the heart of effective project management.

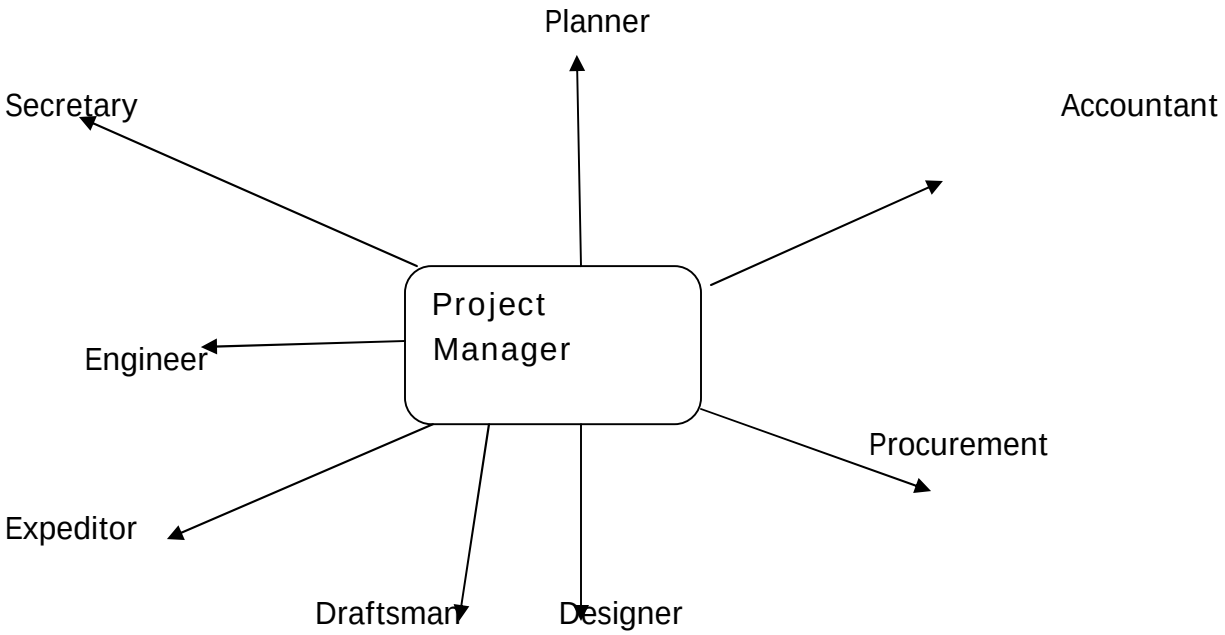


Figure 7.1: Project Team structure

PURPOSE OF PROJECT TEAMS

Project teams are an efficient and effective way of managing project, where efficiency implies performing the work well and effectiveness implies performing the right work.

Consider the following points:

- ✓ To achieve the schedule, the volume of work must be distributed (shared) among a number of people.
- ✓ The scope of project may require a range of skills which any person is unlikely to have.
- ✓ Brainstorming and discussions are a food example of interactive team work to generate creative ideas and solve problems.
- ✓ Project teams enhance motivation.

THE INDIVIDUAL'S PURPOSE FOR TEAM MEMBERSHIP

Why should an individual wish to be part of a project team? Consider the following:

- ✓ Social or Affiliation needs.
- ✓ Power
- ✓ Goal Achievement
- ✓ Security
- ✓ Status
- ✓ Self-esteem

TEAM SIZE

The appropriate team size depends on a number of factors:

- ✓ How many people are required to perform the work for the project?
- ✓ What variety of technical expertise is required by the project?
- ✓ What is the appropriate level of conflict in a team? Mathematically, the odds of conflict increase with the number of people in the team.

- ✓ The needs a balance of personalities.

The ideal team size depends very much on its application. The experts suggest this is between five and ten people.

WHY TEAMS WIN

Research by Belbin at Henley Management College showed that some or all of the following characteristics are present in successful teams:

- ✓ The team leader had an appropriate management style for the project, and was not challenged by other team members.
- ✓ There was a chairman type person who encouraged all the team members to contribute.
- ✓ At least one member of the team generated innovative idea as a means to solve problems and identify new products and opportunities.
- ✓ There was spread of mental abilities
- ✓ There was a spread of personalities which gave the team a balanced appearance.

WHY TEAMS FAIL

Belbin found that the single factor evident in all unsuccessful team was low mental ability. If this is compared with innovation and creativity of winning teams, then it would imply that low mental ability teams were not able to:

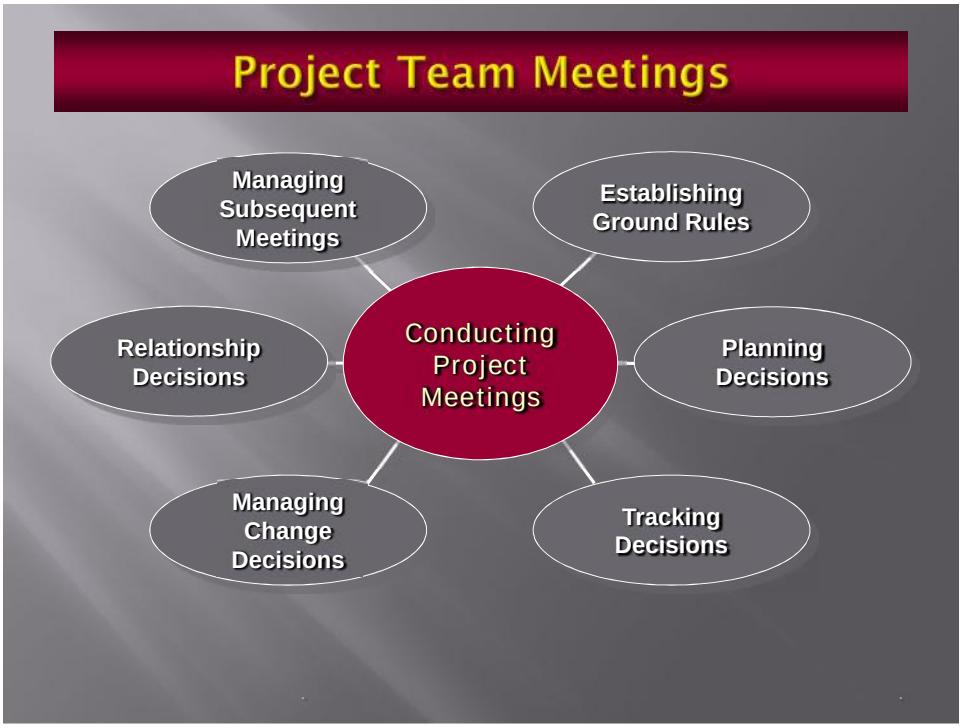
- ✓ Take advantage of opportunities
- ✓ Were poor at problem-solving
- ✓ Unable to change with times.

TEAM DEVELOPMENT PHASES

Project teams pass through a number of distinct development phases or stages. It is important to be aware of these phases so that you can guide the team through the stages, particularly the conflict phase to productive phase.

One well-known model of group development is Bruce Tuchman's five- stage model. The model's stages are:

1. Forming: the team members form a team, there is a sense of anticipation and commitment. Their motivation is high but their effectiveness is moderate because they are unsecure of each other and the purpose of the project.
2. Storming: disagreement and conflict over tasks and ways of working as team. Clash of personalities.
3. Norming: Consolidation differences are accepted and agree to work together.
4. Performing: Effective teamwork-work well and interact together as team
5. Maturing: Getting old gracefully more interested in maintaining situation rathan trying out new ideas.



HOW DO TEAMS MAKE DECISIONS?

Teams can make decisions in number of different ways and each has different purpose and outcome. The common types are:

1. Plop: A decision resulting from a lack of response, where the first idea or suggestion gets endorsed.
2. Take over: A decision resulting from those in authority.
3. Real road: A decision by those in the minority.
4. Unilateral: A decision making by a single person in authority.
5. Vote: A decision by those in the majority.
6. Consensus: A negotiated decision after full group input and discussion.

SPECIAL SKILLS OF THE PROJECT STAFF

1. Technical skills: the ability to apply specialized knowledge or expertise, not all technical skills have to be learned in schools or other formal training programs, many people develop their technical skills on the job.

2. Human skills: The ability to understand, communicate with, work with, lead, and control the behavior of other people and groups.
3. Conceptual skills: Managers must have the mental ability to analyze and diagnose complex situation and distinguish between cause and effect.

Case study and exercise (8)

Project teams work together to achieve common goals. Through interaction they strive to enhance their creativity, innovation, problem-solving, decision making, morale and team performance. As team leader of rapid drought assessment conducting in all Puntland regions you are responsible for designing and building the team. There are many challenges building a team, your presentation should consider the following:

1. Team selection techniques.
2. Ideal team size.
3. Why teams win, why teams fail.
4. Team development phases.
5. Does team leader need to be a technical expert?

CHAPTER NINE: PROJECT COST CONTROL TOOLS AND TECHNIQUES

This chapter reviews certain tools and techniques that can be used in order to help those responsible for managing a project to potentially better control and manage project costs.

Project Control is a formal process in project management.

It is essential for effective project control that performance is measured while there is still time to take corrective action. This chapter will show that not only is it cheaper to take effective action early on in the project, but as the project approaches completion.

In order to glance and understand this chapter the following terms should emphasized and understood.

Cost Management is the processes involved in planning, estimating, budgeting, and controlling costs so that the project can be completed within the approved budget.

The following are three elements or processes of Cost Management:

1. Cost Estimating means developing estimates and measurement for the costs needed for a resource to complete the project tasks and activities.
2. Cost Budgeting means collecting the cost estimates, combining them to develop an overall cost and baseline.
3. Cost Controlling means Managing and controlling factors that change or affect the budget.

The fundamental role of a project manager is to meet the cost, time, performance and quality goals of the project. In recent reports outlined that world projects continue to struggle, with only 29 percent completed on time, 18 percent failed or terminated, and 53 percent behind schedule and over budget.

Effective Cost Management is essential to effective Project Management. Increasingly keen competition and the demand for shorter times to market are driving innovative approaches within the product creation process...key opportunities for future improvements originate in initiatives that span both the process and technology environments.

IMPLEMENTING COST CONTROL

Cost control focuses on the ability of costs to change and on the ways of allowing or preventing cost change from happening. When a change does occur, the project manager must document the change and the reason why the change has occurred and, if necessary, create a variance report. Cost control is concerned with understanding why the cost variances, both good and bad, have occurred. The "why" behind the variances allows the project manager to make appropriate decisions on future project actions?

Ignoring the project cost variances may cause the project to suffer from budget shortages, additional risks, or scheduling problems. When cost variances happen they must be examined, recorded, and investigated. Cost control allows the project manager to confront the problem, find a solution, and then act accordingly. Specifically, cost control focuses on these activities:

- ✓ Controlling causes of change to ensure the changes are actually needed.
- ✓ Controlling and documenting changes to the cost baseline as they happen.
- ✓ Controlling changes in the project and their influence on cost.
- ✓ Performing cost monitoring to recognize and understand cost variances.
- ✓ Recording appropriate cost changes in the cost baseline.
- ✓ Preventing unauthorized changes to the cost baseline.
- ✓ Communicating the cost changes to the proper stakeholders.
- ✓ Working to bring and maintain costs within an acceptable range.

CONSIDERING COST CONTROL INPUTS

To implement cost control, the project manager must rely on several documents and processes:

- ✓ Cost baseline: The cost baseline is the expected cost the project will incur.
- ✓ Performance reports: These reports focus on project cost performance, project scope, and planned performance versus actual performance.
- ✓ Change requests: When changes to the project scope are requested, an analysis of the associated costs to complete the proposed change is required.

- ✓ Cost management plan: The cost management plan dictates how cost variances will be managed.

CONSIDERING THE COST CONTROL RESULTS

Cost control is an ongoing process throughout the project. The project manager must actively monitor the project for variances to costs. Specifically, the project manager always does the following:

- ✓ Monitor cost variances and then understand why variances have occurred.
- ✓ Update the cost baseline as needed based on approved changes.
- ✓ Work with the conditions and stakeholders to prevent unnecessary changes to the cost baseline.
- ✓ Communicate to the appropriate stakeholders cost changes as they occur.
- ✓ Maintain costs within an acceptable and agreed range.

IMPACT OF PROJECT CONTROL

Project Control has a direct correlation to project progress and stake-holder's expectations. Projects rarely fail because of one issue. Rather, failure is usually a collection of minor items that individually have negative impact in a specific project area; however, when looked at over the life span of a project, these minor items can cause significant impacts to cost, schedule, risk, and can manifest themselves as deviations from the original Project Plan.

Scope Control

Scope Control is a straightforward concept. The intent of implementing a Scope Control process is to identify and manage all elements that may increase or decrease the project's scope beyond the required or defined need of the original approved Project Scope Statement. Attributes of Scope Control include the following:

- Determine when a scope change has occurred.
- Manage the actual changes when and if they occur.

Scope changes will come from the need of a change in a project deliverable that may affect its functionality and in most cases the amount of work and resources needed to complete the project. A Scope Control change is a very crucial occurrence. In essence, a scope change may change every phase of the project life cycle.

A scope change normally will require additional project funds, resources and time; therefore, a committee that consists of stakeholders from all areas of the project should be willing to convene and discuss the potential change and its anticipated impact to the project. This group of stakeholders should be a predefined cross section of people that will have the ability to commit their interests at a strategic management level. Once a decision has been made to increase or reduce scope, the change must be authorized by all members of the committee. Any changes that are agreed upon must be documented and signed as a matter of formal scope control. In addition, the impact of the scope change will be realized throughout the Planning Phase processes and documents. Documents such as the Work Breakdown Structure and Project Schedule will need to be reevaluated and updated to include the scope change impacts. Scope changes need to be communicated clearly and effectively to the project team by the project manager. Team members will want and need to understand how the scope changes affect their respective roles in the project.

Quality control

Quality control involves monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory results. Quality control should be performed throughout the project. Project results include both product results such as deliverables and management results such as cost and schedule performance. Quality control is performed by the Quality Engineering (QE) unit at DIS.

Each project should have a QE representative assigned to it. The QE representative will work with the Project Manager to develop a Quality Management Plan specific for that

project using agency quality guidelines with input from the customer and other stakeholders.

The project management team should have a working knowledge of statistical quality control, especially sampling and probability, to help evaluate quality control outputs. The team should also be aware of the following:

1. Prevention (keeping errors out of the process) and inspection (keeping errors out of the hands of the customers).
2. Attribute sampling (the result conforms or it does not) and variables sampling (the result is rated on a continuous scale that measures degrees of conformity).
3. Special cases (unusual events) and common causes (normal process variation). Common causes are also called random causes.
4. Tolerances (the result is acceptable if it falls within the range specified by the tolerance) and control limits (the process is in control if the result falls within the control limits).

WHY PROJECTS ARE LATE AND OVER BUDGET?

1. Omissions: Leaving out work that must be done. Examples could include documentation, interfaces with the PMO, or interfaces with other projects.
2. Merging: the point at which several project schedule paths meet. Successor work cannot begin until predecessor work is complete. The time to get through this point tends to increase with the number of activities being merged.
3. Errors: Mistakes or work not done at all. Errors, even though expected, are rarely provided for in the planning phase.
4. Rework: Work not completed in accordance with company standards and must be redone. There is a human nature reluctance to report bad news.
5. Failure: to understand the complexity of the project – Our inability (especially true of technical people) to understand the complexity of the work planned. This causes us to underestimate both budgets and durations.

6. Queuing: Improper allocation of resources to critical path activities.
7. Multitasking: Most companies nowadays demand their people multitask. This causes project activities to wait on resources and suffer efficiency degrades, while switching activities as well as delays in the network as each activity is extended.
8. Staff Syndrome: Team members waiting to start work till there is schedule pressure. This will ultimately affect the critical path and the project completion date.
9. Policy: Company policy about merits, bonuses, performance reviews, or other rewards can drive people to do the wrong thing. Rewards or punishments give out for being early, on time, late, over budget, on budget, or under budget will drive people to protect themselves and do things not to generate rewards but to insure no pain.

Case study and exercise (9)

Suppose you have been appointed Puntland ministry of finance and you will be responsible for controlling and managing Puntland finance system. The Puntland president has requested you to present a brief cost control system. Your presentation should outline the following points:

1. Cost control and cost budgeting.
2. Appropriate way of controlling Puntland finance in order to prevent fraud and corruption.
3. Importance of cost control.
4. Cost control tools and techniques you will employ to manage and control Puntland income and expenditure.

Chapter 10: Mitigating Project Risk- from Concept through to Finalization

We live in an uncertain world. Accidents and mishaps happen every day. Illness and natural disasters fell millions of people every year. A person, who is happy, healthy and alive today, does not know what will happen tomorrow. This uncertainty is known as Risk.

The scope, magnitude and impact of risk are dynamic-they will change throughout the project.

All projects exist in an environment of change and that by their very existence, create change themselves. With such fluid environment it should not surprise any that the concept of risk and its identification, management and control will be one of the major forces the stakeholders will need to collectively address.

The risk of gaining adequate funding, the risk of procuring the wrong materials or perhaps the risk of personnel not being available when required are all examples of different types of risk impacting on the project at different times.

It should be apparent from these opening remarks that the goal of risk management is to ensure that a suitable risk response mechanism is to put in place to reduce the probability of trauma in the project or to reduce the resulting consequences that is to manage the risk.

DEFINING RISK

So what exactly risk is? For such an everyday and overused word, there appears to be considerable decree of academic and practitioner confusion over exactly what it means.

The Macquarie Dictionary defines risk “the possibility of loss or injury (a negative outcome)”.

Australian Standard defines risk as “the exposure of an activity to an uncertain outcome”.

STEPS IN RISK MANAGEMENT

Risk management is defined as a systematic process for identifying and evaluating pure loss exposures faced bay an organization or individual, and for selecting and administering the most appropriate techniques for treating such exposures.

Over the years different experts and authors have published different models of risk management, each of which offers the reader a further insight into the process of managing risk. While the number of stage each author endorses ranges from three to seven, and while each one could be deemed to be the right one to follow, this books will adopt the five-step models:

Stage 1: Risk identification

The first stage involves identifying all the sources of risk that have the potential to impact on the project. Don't rush for the crystal ball just yet as there are a number of valuable techniques the project personnel can use differing degree of confidence. Comprehensive identification of all risk (actual and potential) is critical to the project's successfully completion. This is because any risk not identified in the risk assessment (at this early stage) would be automatically excluded from any further analysis (and possible response strategy) once schedule commenced. It should be noted here that two of the important criteria for distinguishing risk are whether the risk is internal or to external. Internal risk may be controlled and/or influenced by the project manager and team, while external risk may be harder to be controlled and/or influenced by project manager and team.

Internal risk (Controllable)	External risk (Uncontrollable)
Ambiguous project charter	Market relegation and changes
Inaccurate estimates	Natural disasters
Poor performance reports	Increasing global competition
Limited resource available	International regulations and standards
Low-level skills for staff	Conflicting contractor parties

Lack of Accountability	Technology innovation

While it may be sufficient to identify and categorize the project risk under these, a more appropriate technique could be used to really understand where the risk will come from. This involves examining risk from the perspective of the eight project management methodology.

The management process is:

1. Scope- the specification for the project.
2. Time- the duration allowed for the project.
3. Cost- the budget decision behind the project.
4. Quality- the specification required to complete the project.
5. Human resource- the capability required the project.
6. Communication- the information needs of the project.
7. Procurement- the decision to make or buy in the project.

How do you identify the risk?

As discussed, there are a lot of different types of risk categories, some internal and others external to the project organization. But how exactly can the risk are identified in the first place? The first to note is that there is no one common approach common approach to follow. People tend to favor different approaches (no doubt something that has worked well for them in the past). Below are a number of useful options for your review:

- Risk registers
- Project completion reports
- Lesson learned
- Checklist
- SWOT analysis
- Brainstorming
- Stimulation

- Critical incident reports
- Risk specialists
- Strategic plans
- Interviews and workshops
- Project charter
- Feasibility studies
- Industry database
- Subject matter experts
- Specification description

Stage 2: Risk assessment

Following the risk identification stage, a formal and detailed assessment is required in terms of the:

- The probability of the risk event occurring
- Consequences of the risk events on the project
- Priority (or ranking) of the risk event
- The response strategy and accountable person assigned

Stage 3: Risk analysis

Let's recap the journey so far. Risk management starts with:

1. Profiling the risk context and identifying the potential sources of the risk.
2. Assessing the probability, consequences and priority of the risk.

We are ready to begin analyzing the risks and impacts in more details throughout the project using a number of proven risk analysis techniques. As with any technique, there are personal favorites. Consider the following (and, as usual, try to add your own to the list):

1. PERT analysis- considers the critical path and other networks.
2. Decision trees- consider possible paths and expected values returned.

3. Sensitivity analysis- considers demand, feasibility, and takes up.
4. Expert judgment- considers options, perspective and viewpoints.
5. SWOT analysis- considers issues impacting the situation.
6. Scenario scheduling- considers alternative scheduling options.
7. Impact analysis- considers action and consequences.
8. Stakeholder forums- consider expectation objectives and deliverable.
9. Contingency planning- considers possible options and recovery strategies.
10. Financial modeling- considers financial implication for funding, cash flows and returns.

Stage 4: Developing management (response) strategies

The next step is to put forward well-planned and appropriate strategies in response to the risk and determine who will be held accountable for managing the risk event. In other words, a risk management strategy or response that will be assigned to, or 'owner by, someone for each stage of the project

All risk must be managed and managed well. There is too much at 'risk' for any other course of action to be realistically considered. However, for those who are still not convinced, perhaps a little digression by way of an example will helps. Consider your investment portfolio perhaps $10 000 worth of managed funds with any investment broker. Take your mine back to 11 September 2001 and the day after the terrorist attack on the world trade center towers. As the fallout from the attack spread around the world and through the stock market, shares began plummeting as investors feared the worst.

Now consider your response to this stock market collapse. Would you:

1. Ignore the falling share prices and do nothing (accepting the risk)?
2. Immediately sell down your portfolio and get out of the share market to limit your lose (rejecting the risk)?

3. Increase your portfolio by buying blue-chips stock at rock bottom prices and decrease your existing portfolio to offset the losses caused by falling price.

Don't ask me too your choose. It is your portfolio. However, I don't that your response may well be the best response for your risk profile. Whichever response you choose you is demonstrating your response, your management of the risk threat.

Risk response strategies:

Recall that projects are all about time, cost, specification and resources each of which now needs to be considered in light of possible risk response strategies (regardless of where you are in the life cycle). There are a number of possible choices to be made that normally come down to choosing one of the five strategies explained in below table.

Table 10.1 Responding to risk-a choice of five strategies

Risk response	Explanation
Acceptance	The complete acceptance of the risk and the implication it has on the project's outcome. By choosing this response, the stakeholders take the chance of the risk impacting on their project with little provision or the contingency of having a prepared response to counter the risk. An example would be the wedding party planning an outdoor wedding hoping that it won't rain during the ceremony and therefore not ordering a marquee just in case.
Mitigation	This strategy is designed to work in with the risk, as it cannot be effectively, nor are the stakeholders willing to accept it outright either. In this case, action is taken to reduce probability or consequence of the risk event. This could include rescheduling the task to a later date or increasing the resources available.

Transfer	The main aim is to transfer the risk to someone more capable of dealing with the problem or the opportunity presented. An example would be hiring specialist contractors to perform at their risk, not yours. Contractors requiring their own insurance, their personal protection equipment or their own tools would be further examples.
Share	In many cases, project risk is shared between partnership, consortiums or/mergers where each part is contracted for their particular expertise and each has a particular responsibility when it comes to managing risks.

Stage 5: Monitoring and evaluation

Risk assessment is an invaluable tool to the project manager, their team and all other stakeholders whose actions impact on the project. However, identifying, assessing, analyzing and managing risk at the start of the project does not mean that you are also following due process every time a project is initiated.

Because projects manage change from the concept stage through to the finalization stage, risk is not restricted to any particular stage in project life cycle. All stakeholders must be both aware of, and responsible for identifying and responding to all potential risk that may impact the project. Consider the example of risk involving the stability of project team. At the project start, the team probably has not been formed, let alone fully briefed, or been required to give their commitment to the project. In the scheduling stage, the team might be brought together with a degree of enthusiasm and their support thoughts. Reality might hit in the execution stage where conflicting project, excess workloads, job rotations might reduce the initial commitment and output.

Let's not forget other risk challenges the project will face- challenges in scope, delayed approvals, schedule revision, budget blowouts, contractor breach, supplied quality, political challenges and exchange rates. Clearly none of these should be ignored as each has potentially dire consequences or opportunities for the project. Sadly, though

many projects do exactly that- ignore these risks because they have no mechanism to conduct risk management once the project approved.

DISASTER RECOVERY PLANNING

A disaster is sudden, unplanned catastrophe that prevents your company its critical business functions for a period of time and could result in significant damage or loss. The time factor will determine whether a problem or service interruption is an inconvenience or a disaster- losing power for a few hours may be an incontinence, but losing a power for a few weeks could be financial disaster.

The objective of disaster recovery management is to reduce the consequence of a disaster to an acceptable level. Disaster recovery planning is essentially a contingency response from your risk management planning, but due to the unique nature and size of the problems it is probably best managed-as project.

The management of the disaster recovery plan should be assigned to a manger with responsibility to set up a team to:

- ✓ Develop the disaster recovery plan
- ✓ Control the disaster recovery plan
- ✓ And when time come- implements the disaster recovery plan quickly and effectively.

Disaster recovery planning essentially follows the same process as the risk management plan, except now you are focusing on the major risks, which cannot be eliminated, mitigated or deflected. Controlling the disaster recovery plan may involve training, practice and frequently updating the data base of information. Fire, floods, earthquake or hurricanes would be a good examples of disaster where your office, factory, facility could completely destroyed, or have restricted access for a long period of time-how are you going to recover?

DISASTER RECOVERY IMPLEMENTATION

When a disaster happens, this is the time to implement your carefully developed and updated disaster recovery plan. The first step is to mobilize the disaster recovery team, may be at a prearranged office where all the necessary office equipment, information and communication are ready. Communicate the disaster recovery plan to all the key people and stakeholders.

Case study and exercise (10)

Unplanned disasters are always waiting just around the corner to disrupt your project. For this case study you have been appointed risk manager to prepare risk management plan and disaster recovery plan for the project which involves construction of Qardho main road. Your risk management planning should consider how you would address natural disasters. Your presentations should include the following:

1. Identify the risks.
2. Develop stages of risk management.
3. Anticipate natural disasters you are expecting during project implementation.
4. Disaster recovery preparation.

FURTHER READING AND REFERENCE

Project Cycle Management: Integrated Approach and Logical Framework
European Commission, DGVIII, Evaluation Unit, 1993 (available in English, French and Russian)

AS/NZS 4360: 1995, risk management (Australian and New Zealand standard)

Kersner, H. project management a system approach to planning, scheduling and controlling, Van Nostrand Reinhold

Barnes, N. & Wearne, S., the future for major project management, international journal of project management, Vol 11, No 3, August 1993, pp 135-142

Wideman, max, a framework for project and programme management integration, PMBOK handbook series-volume 1, 1993

Meredith, J., and Samuel, J., project management a managerial approach, Wiley

Rory Burke, fourth edition, Project management, planning and control techniques

Stephen Hartley, project management, principles, process and practice

Turner, Rodney, handbook of project-based management, McGraw-Hill