

CHAPTER TWO: PROJECT LIFE CYCLE PHASES - PROJECT LIFE



a) The project life cycle

a) Project initiation phase

b) Project planning phase

c) Project Execution/ Implementation

- Progress Tracking /Project Monitoring and Control Part

Progress Assessment & Reporting

Scope Management

Risk Mitigation

d) Project Closeout/Clean-up phase

- Project post-mortem
 - Collection of re-usable Components
 - Draw lessons from the good & bad Practices of the project
 - Project-End Audit
- 

Introduction



Systems view of Project Management

- Projects must operate with a broader organizational environment, and project managers need to consider projects within the greater organizational context
- **Systems approach describes a holistic and analytical approach to solving complex problems that includes using a systems philosophy: overall model of thinking about things a systems**
 - **Systems analysis:** a problem solving approach that requires defining the scope of the system, dividing it into components and then identifying and evaluating its problems opportunities, constraints and needs and
 - **Systems management:** addresses the business, technological and organizational issues associated with creating, maintaining and making change to a system.
- ***Project managers must follow the systems philosophy to understand how the project relate to the whole organization, use the systems analysis to address needs with a problem-solving approach.***





Importance of top management commitments

Is there any importance of Top management commitments in ICT projects;

1) Project managers need adequate resources:

- to management allocate resources such as money, and human resources and with their commitment, then the project will have the required resources.

2) Approval for unique project:

- Project managers require approval for unique project needs in timely manner. With top management commitments, the project manager will be get of project s needs timely

3) Required cooperation from the employees:

- top management commitment ensures cooperation from functional managers and other employees.

4) Leadership and mentorship:

- top managers acts as the mentors and leadership skills coaches for the project managers, since most project managers are technical and lack managerial / leadership skills.




life cycle phases



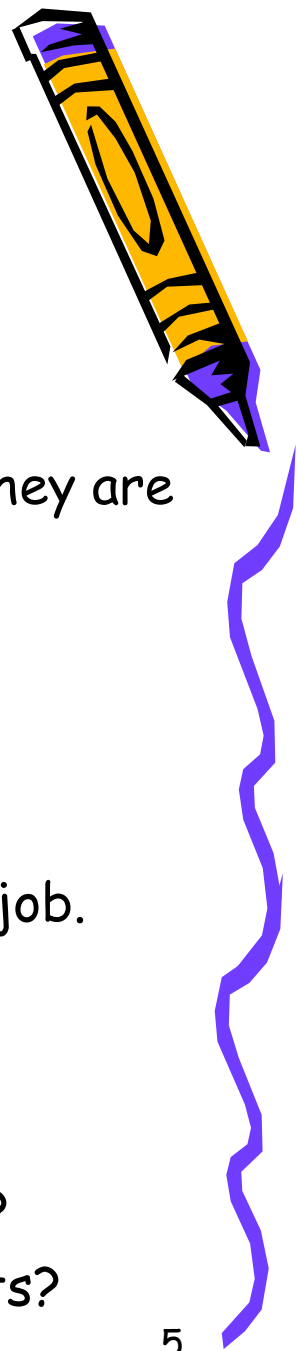
life cycle phases

- Organizations performing projects will usually divide each project into several *project phases* to improve management control. Collectively, the project phases are known as the *project life cycle*. Usually they are sequential. *These are unique to the industries*
- Project can be broken down into a series of steps/stages/phases:

What is project life cycle?

 A project life cycle is a collection of project phases

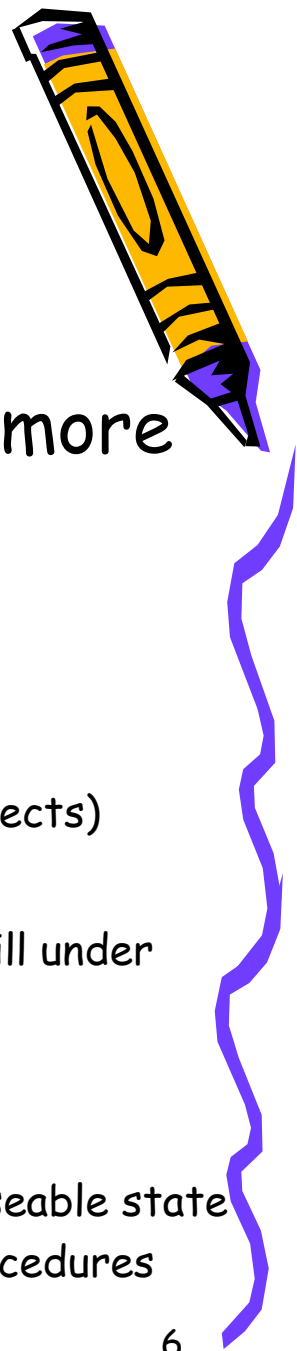
Project Life Cycle CONT...



- **Project Life Cycle Define:**
 - What technical work to do in each phase.
 - When the deliverables are to be generated, how they are reviewed, verified & validated.
 - Who is involved in each phase.
 - How to control and approve each phase.
- **Stages, Phases**
 - Projects are rarely tackled as a single, monolithic job.
 - What will you do to break up long projects?
 - Do they need to be long?
 - How long can a long Project Last?
 - If you want to shorten a project, what can you do?
 - Can you split a project into several smaller projects?



Project Life Cycle CONT...



- **Why have Stages?**

- Break a large problem down into smaller, more manageable problems

What is Project Phasing?

Phasing may be used:

- To break up a long project into smaller, more manageable ones(Mini projects)

Or

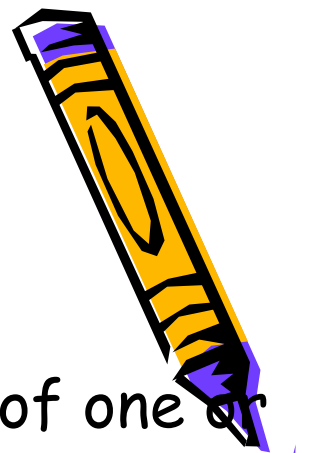
- To deliver some working parts of an application while other parts are still under development (or will be done later)"Phased implementation"

Or

- To run pilot system before committing system to wide scale use
- Unlike prototyping, the pilot system is a finished, working system in a useable state
- Experimentation is more likely to be concerned with related clerical procedures



Project Life Cycle CONT...

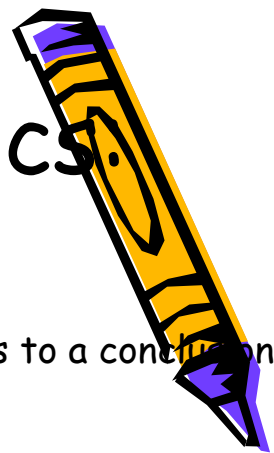


Project Phase

- Each project phase is marked by completion of one or more deliverables.
- A *deliverable* is a tangible, verifiable work product.
- The conclusion of a project phase is generally marked by
 - a) completion and review of both key deliverables and project performance to date,
 - b) to determine if the project should continue into its next phase and
 - c) detect and correct errors cost effectively. These phase-end reviews are often called *phase exits*, *stage gates*, or *kill points*.
- Practice of overlapping phases is often called *fast tracking*.



PHASES - Common Characteristics



Cost and staffing

- levels are low at the start, higher towards end, and drop rapidly as the project draws to a conclusion.

Completion

- The probability of successful completion generally gets progressively higher as the project continues.

Stakeholder Influence

- On the final characteristics of the project's product and the final cost of the project is highest at the start and gets progressively lower as the project continues.

Risk

- Uncertainty and hence risk of failing is high at the beginning and get progressively lesser/better as project continues

Key stakeholders

- PM, customer (buy/use), org, team & sponsor (pays), project management team, PMO

Differences

- In general, differences between or among stakeholders should be resolved in favor of the customer.

Managing

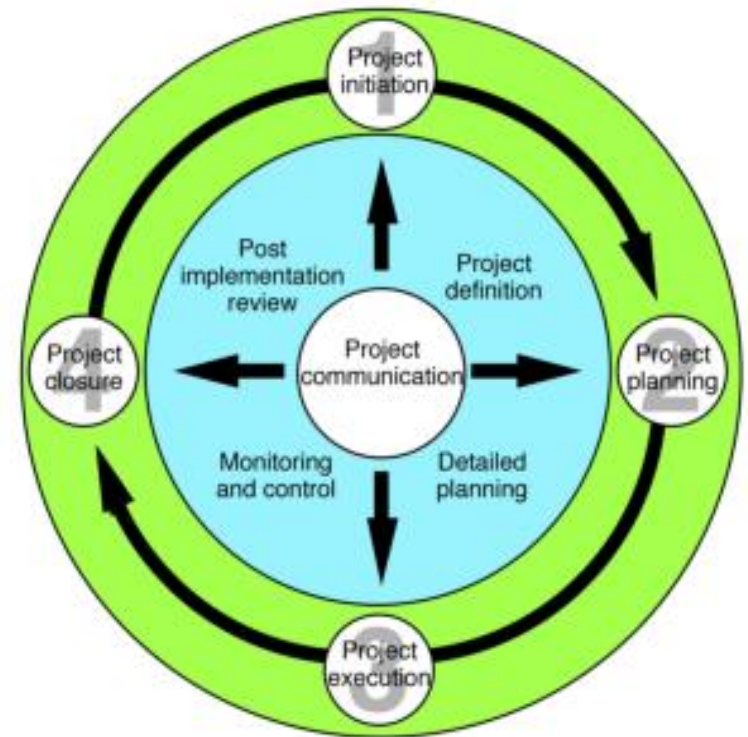
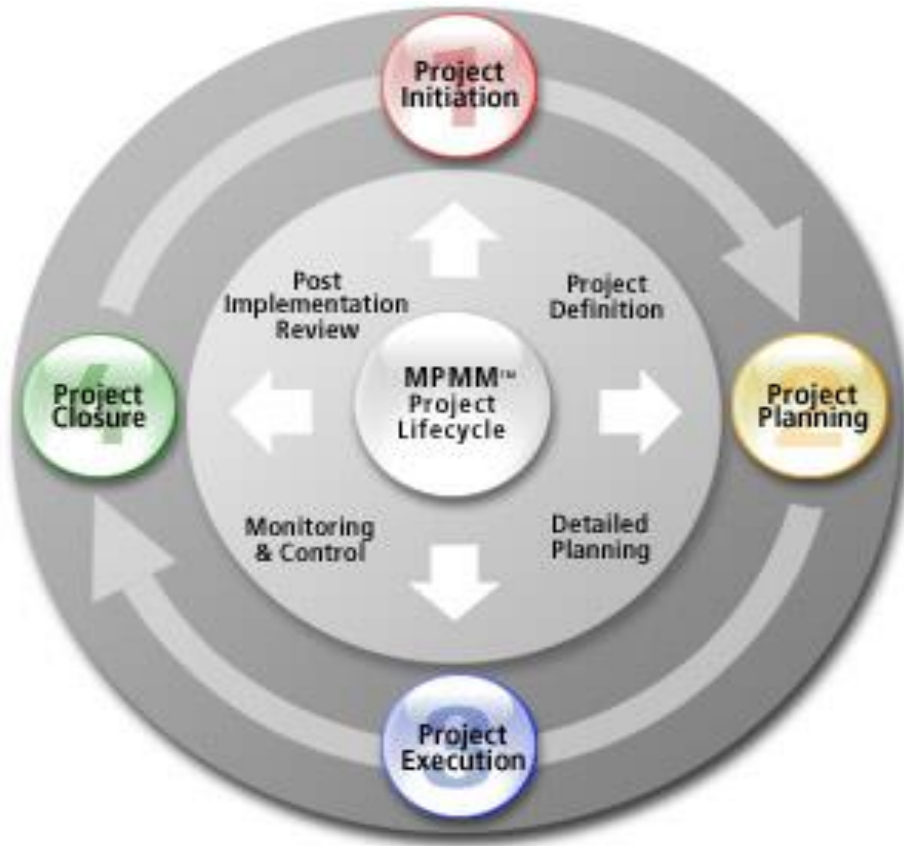
- is primarily concerned with "consistently producing key results expected by stakeholders,"

Leading

- Establishing direction vision of the future and strategies, Aligning people to vision, Motivating and inspiring.



Project Management Life Cycle phases



ie four phase of the project life cycle. Adapted from J. Westland, *The*
an Page Limited (2006).



Project Management Life Cycle phases

Breaking up large projects

- Project Management Life Cycle comprises four phases
- Mostly, all projects have to pass through the following five phases:
 1. **Conception phase/initiation:**
 - Clarifying the nature of the project, definition, Defining goals and objectives
 - Feasibility studies
 2. **Planning and organising phase:**
 - Detailed organisation of the project:
 - Project definition
 - Planning and scheduling
 3. **Implementation phase:**
 - Project implementation and control
 4. **Project clean-up phase**

Conception phase/initiation

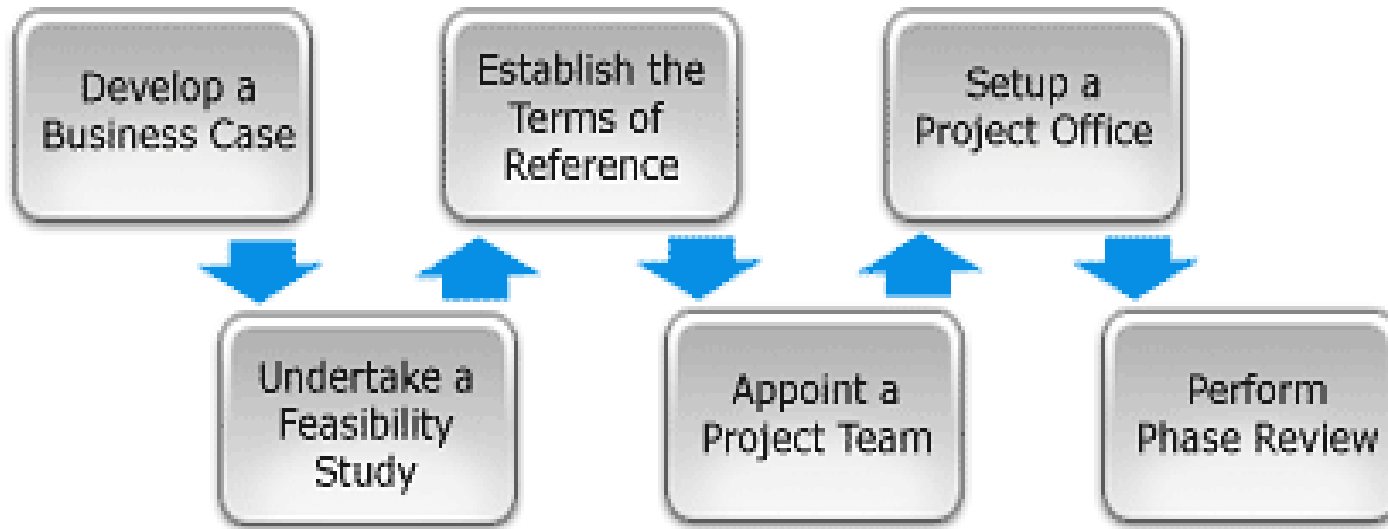
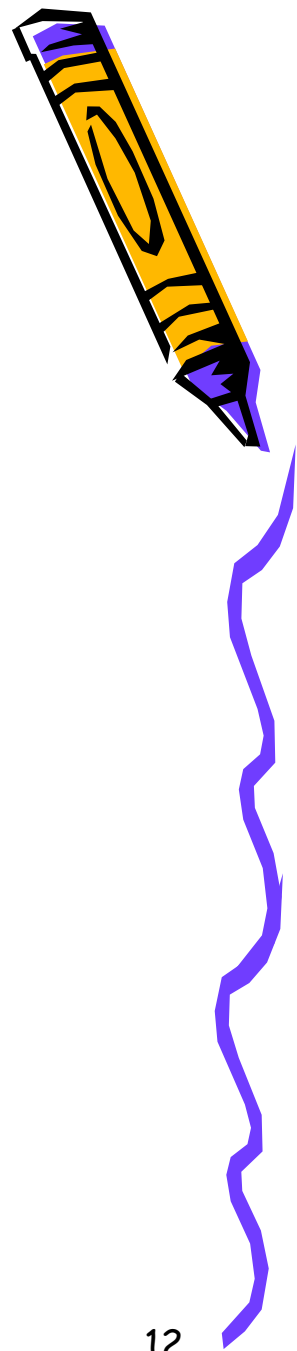


Conception phase/ project initiation/ project pre-planning phase:

- Clarifying the nature of the project
 - Project Initiation is the first phase in the Project Life Cycle and essentially involves starting up the project.
 - You initiate a project by defining its **purpose** and **scope**, the **justification for initiating it** and the **solution** to be implemented.
 - You will also need to recruit a **suitably skilled project team**, **set up a Project Office** and perform an end of Phase Review.
 - The Project Initiation phase involves the following six key steps:



Conception phase/initiation



Project initiation steps



- **Step #1. Create a Business Case.**

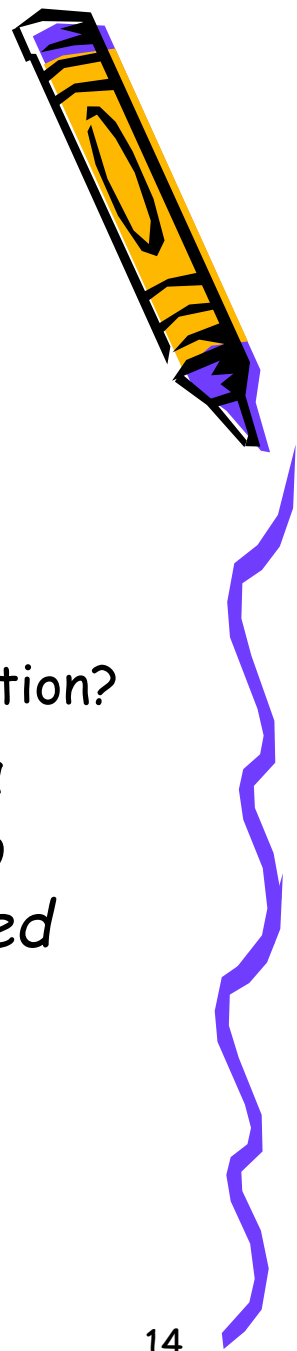
- A business case document is the formal start of the project when the project sponsor (or the project initiator) gives a description of the business problem/opportunity.
- The project is to be initiated to address the problem or provide alternative solutions. The business case document will include the business problem and potential costs associated with the project implementation
- A Business Case justifies the start-up of a project. The business case includes:

- **A detailed description of the problem or opportunity;**
- A list of the alternative solutions available as well as their costs and benefits;
 - » An analysis of the business benefits, costs, risks and issues;
 - » A description of the preferred/ recommended solution;
 - » A summarized plan for implementation

- The business case is then approved by an identified project sponsor, and the required funding is allocated to proceed with a feasibility study.



Project initiation steps cont....



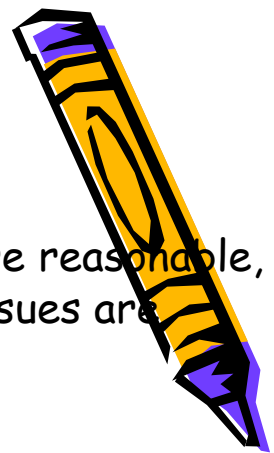
- **Step #2: Make a Feasibility Study.**

- **Feasibility Studies**

- The basic questions to be asked are:
 - Is the project feasible?
 - How feasible are the alternatives under consideration?
 - *The aim of the study would be to carry out a preliminary investigation which should help to determine whether the project should proceed further and how it should proceed.*



- The feasibility study will also investigate whether the forecast costs are reasonable, the solution is achievable, the risks are acceptable and the identified issues are avoidable.



1. Economic feasibility:

- Under taking a Cost-benefit analysis on the proposed alternative solutions. At this point, an organization may evaluate an alternative in terms of whether funds and resources exist to support the project.
 - For example, although you may be in a market for a new car, the reality of your limited income rules out the fancy sports car. Conducting an economic feasibility should serve as a reality check for each option or alternative.

2. Technical feasibility:-

- Technical feasibility focuses on the existing technical infrastructure needed to support the IT solution. Will the current infrastructure support the alternative? Will new technology be needed? Will it be available? Does the current IT staff have the skills and experience to support the proposed solution? If outsourcing, does the vendor or company have the skills and experience to develop and implement the application?

3. Organizational feasibility:-

- Organizational feasibility considers the impact on the organization. It focuses mainly on how people within the organization will adapt to this planned organizational change. How will people and the way they do their jobs be impacted? Will they accept this change willingly? Will business be disrupted while the proposed solution is implemented?

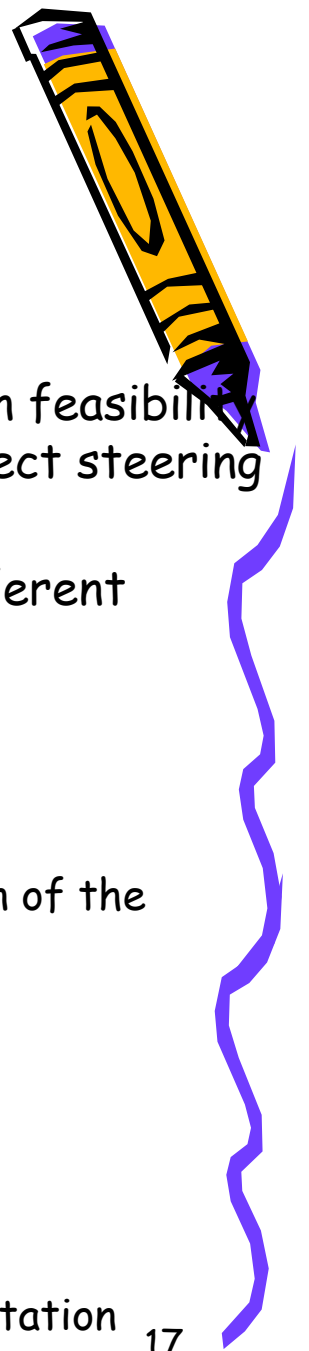




- The outcome of the Feasibility Study is a confirmed solution for implementation.
 - Feasibility study involves
 - Researching the business problem or opportunity
 - Documenting the business requirements for a solution
 - Identifying all of the alternative solutions available
 - Reviewing each solution to determine its feasibility
 - Listing any risks and issues with each solution
 - Choosing a preferred solution for implementation
 - Documenting the results in a feasibility report



Feasibility Report



• *Feasibility Report*

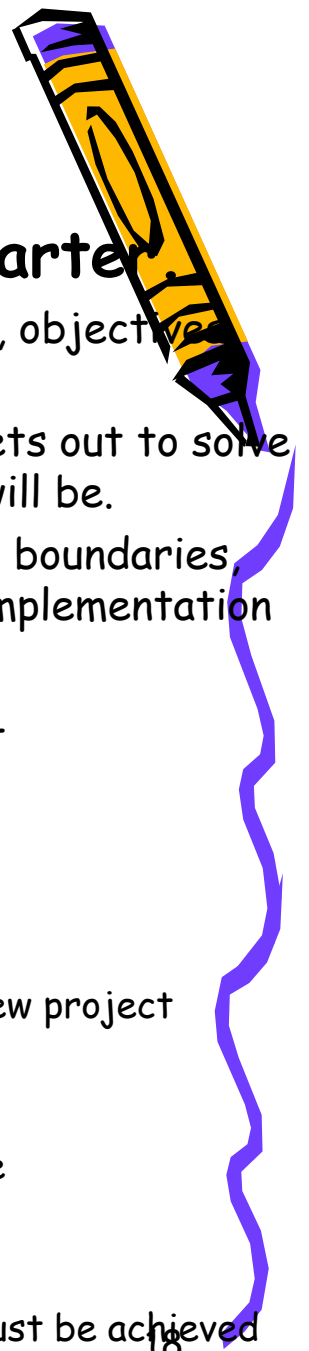
- The project manager will be responsible for reporting on feasibility to the sponsoring decision makers or stakeholders/project steering committee/project board.
 - » This may be done in a variety of ways and with different degrees of formality.

Typical contents would include:

- **project definition covering goals and objectives**
- general background and introduction with an outline description of the options
- a clear definition of success criteria or feasibility criteria
- findings of the feasibility study
- financial appraisal
- preliminary compliance
- organisational suitability
- the plan for the management of the project including implementation



Project initiation steps cont....



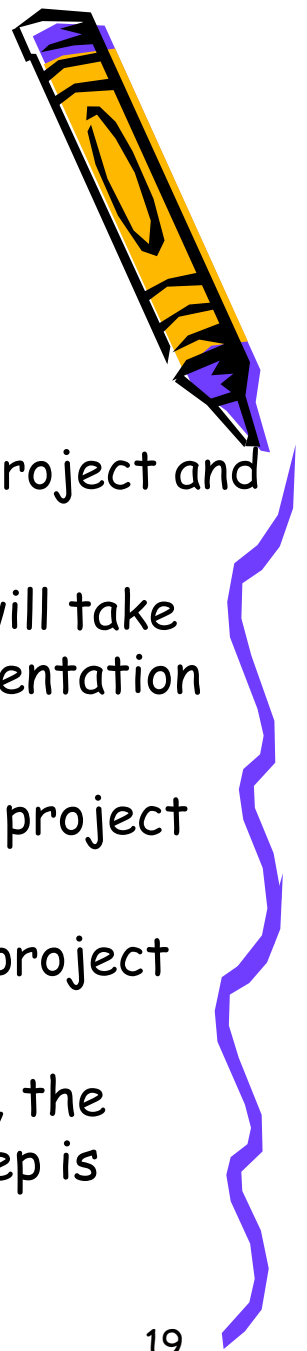
- **Step #3: Develop Project Definition /Project Charter**
 - Project Definition/Project Charter is statement of the scope, objectives and participants in a project
 - The project charter essentially describes what your project sets out to solve the business problem and what the boundaries of the project will be.
 - » It specifies the project vision, goals & objectives, scope & boundaries, deliverables & expectations, project organization and an implementation plan.

Contents of the project charter/Terms of reference includes:-

- i. Business case
- ii. Project vision, scope, boundary and objectives
- iii. Complete scope of the project
- iv. List all of the critical project deliverables
- v. Project customers and project stakeholders roles and responsibilities for the new project
- vi. Stakeholders key roles and responsibilities
- vii. Organizational structure for the project
- viii. Overall Project implementation/Milestone plan and timeline - Schedule estimate
- ix. Project Costs and resources needed
- x. List any risks, issues planning assumptions and constraints are also identified
- xi. Project Critical Success Factors. Critical success factors are outcomes that must be achieved in order for the project to be considered a success. They should correlate with the Project Objectives



Project initiation steps cont....

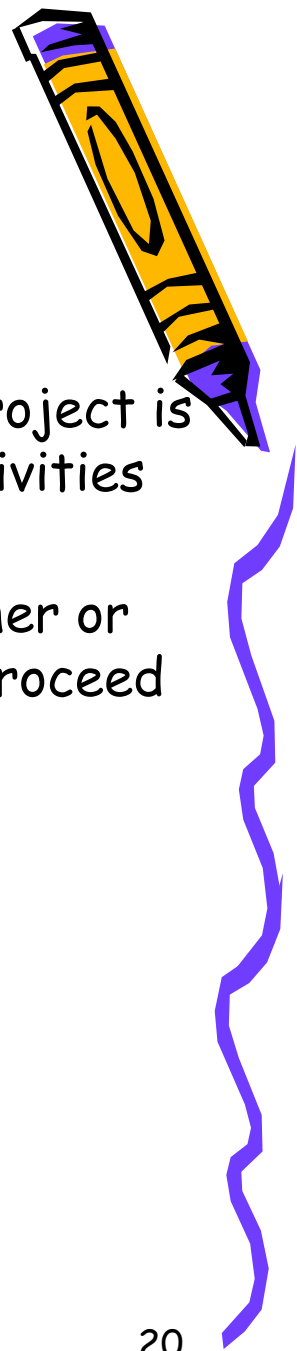


Step 4: Appoint/Assign Project Management Team

- The project charter is developed so you can proceed with identifying human resources required for delivering the project and achieving its goals.
 - You will need to appoint the management team which will take the primary responsibility for the planning and implementation of your project.
 - The Project Committee should be established and the project manager should be assigned.
 - Then the project manager will work on recruiting the project team and making project assignments.
 - Once the team is recruited and assignments are made, the project initiation phase is almost finished; only one step is ahead.



Project initiation steps cont....

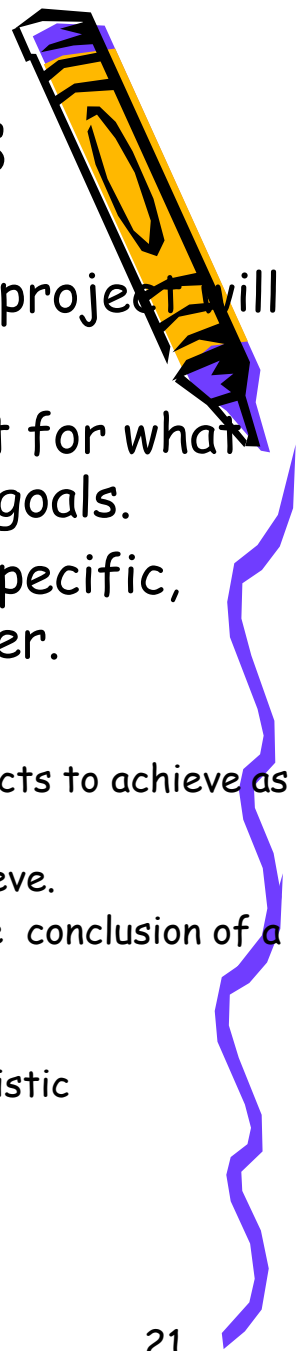


• **Step 5: Perform Project Review.**

- A review stage should be conducted to ensure that the project is successfully initiated - this means all of the initiation activities are completed.
- During this project review, a decision is made as to whether or not the team has met the objectives and is approved to proceed to the next project phase, being the "Planning" phase.



Project Goals and Objectives



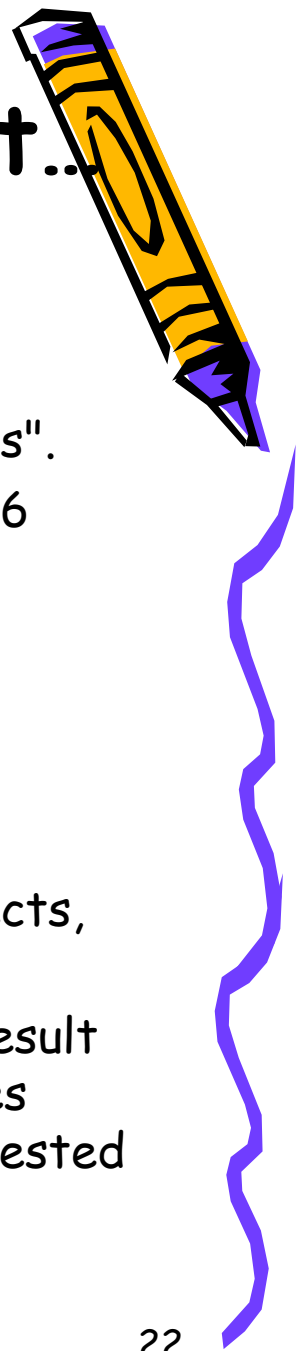
- Goals and objectives are statements that describe what the project will accomplish, or the business value the project will achieve.
- Goals are high level statements that provide overall context for what the project is trying to achieve, and should align to business goals.
- Objectives are lower level statements that describe the specific, tangible products and deliverables that the project will deliver.

Project Objectives

- The project objective consists of the business benefits that an organization expects to achieve as a result of spending time and exerting effort to complete a project.
- Objectives are concrete statements describing what the project is trying to achieve.
- The objective should be written at a lower level, so that it can be evaluated at the conclusion of a project to see whether it was achieved or not.
- Objectives should not be vague.
- A well-worded objective will be Specific, Measurable, Attainable/Achievable, Realistic and Time-bound (SMART).
- Key words such as investigate, develop and analyse should be used in objectives
- It should contain three components expressed in past tense;
 - A subject
 - An action
 - A set of conditions



Project Goals and Objectives Cont...



An example of an objective statement might be to

- "upgrade the helpdesk telephone system by December 31, 2015
- to achieve average client wait times of no more than two minutes".
- To develop a Web site form my E-commerce project by Dec 2016
- To analyse the current system in two weeks time.

Types of Objectives

Project objectives can be divided into three categories:

- 1. Main objectives (the reasons for doing the project)
- 2. Additional objectives (the benefits achieved almost as side-effects, not the reasons for doing the project)
- 3. Non-objectives (the benefits that are not to be expected as a result of the project). Care should be taken to list only such non-objectives that can be reasonably expected by project sponsors or other interested parties, but are not going to be achieved by the project.



Project Selection Methods/project appraisal criteria



a) Focus on the broad organizational needs:

- Projects that focus on the broad organizational needs are likely to succeed.

b) Categorizing information Technology projects:

- categorization assess whether the project responds to a
 - **Problem:** undesirable situations that prevents an organization from achieving its goals;
 - **Opportunity:** chance to improve the organization;
 - **Directive:** new requirements imposed by the management. Government or some external influence.
- Other categorization is based on project time schedule and priority (high, medium or low) based on the business environment

c) Performing net present value other financial analysis: NPV

- calculating the expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time. Other financial analysis methods includes; Payback analysis, Return on Investment

d) Using a weighted scoring model.

- Method used to select a project based on many criteria; such as key business objectives, strong sponsor, strong customer support, low risk, positive NPV etc

e) Implementing a balanced scorecard:

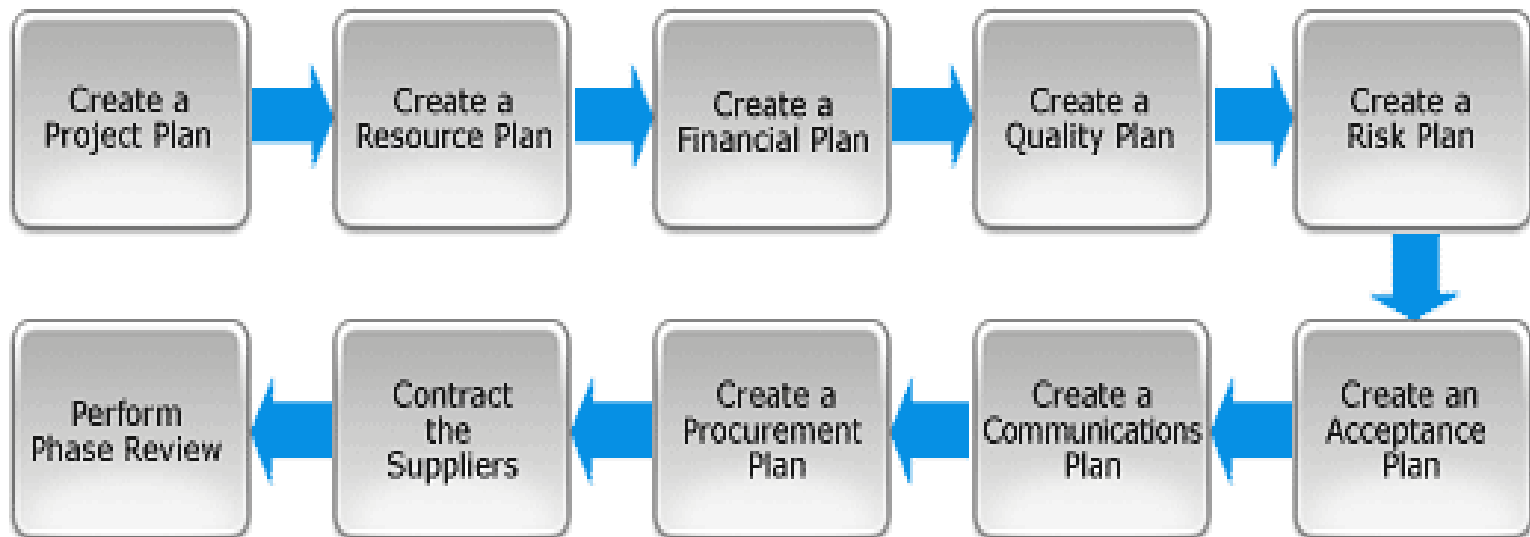
- a method that converts an organization's value drivers such as customer service, innovation, operational efficiency and financial performance to a series of defined metrics.



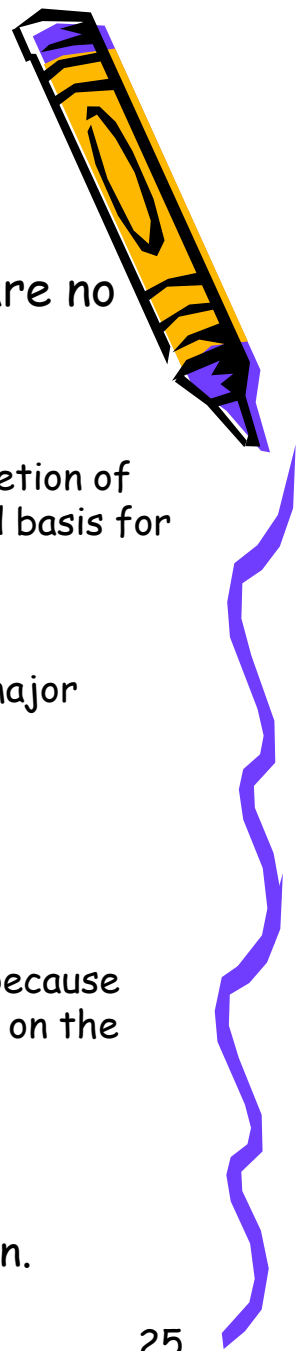
Project Planning Phase

Project Planning

- After defining the project and appointing the project team, you're ready to enter the detailed Project Planning phase.
 - This involves creating a suite of planning documents to help guide the team throughout the project delivery.
 - The Planning Phase involves completing the following 10 key steps:



Project Planning Involves



Produce a plan for each sub-project, or for the total project if there are no sub-projects as follows:

a). ***Identify Major Activities***

- Break the work down into activities, ensuring that milestones correspond to completion of one or more of these. In practice the achievement of a milestone is usually a good basis for identifying an activity e.g. 'prepare and perform user training'.

b) ***Identify and Chart Dependencies***

- Produce a network chart for the sub-project showing dependencies between the major activities and dependencies on other sub-projects or external events.

c) ***Estimate Effort and Duration***

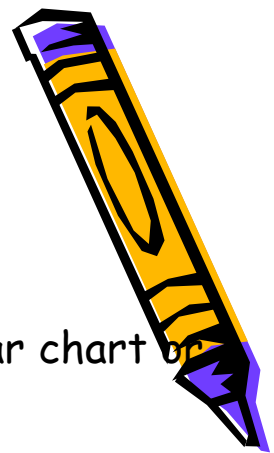
- Estimate effort and duration of each major activity.

d) ***Provide Contingency***

- At this stage estimates are likely to be 'soft' and probably expressed in ranges, because precise details of the work are not settled. Contingency needs to be allowed both on the estimated effort and elapsed time because of:
 - the likelihood of unforeseen work arising,
 - the likelihood that tasks will take longer than expected,
 - the likelihood of changes to requirements or plans before publication.
(Subsequent changes should be processed through Change Control).



Project Planning Involves cont..



e) Schedule Major Activities

- Determine start and end dates for each major activity and produce a bar chart or other diagram, showing relationships between activities.

f) Calculate Resource Requirements

- Calculate requirements for each time period. Identify needs for each resource type (e.g. systems analyst, user staff) and identify needs for special skills or scarce resources.

g) Calculate Costs

- Calculate costs for the sub-project. This should include 'hardening up' items such as cabling, training etc., for which an order of costs had been produced previously.

h) Determine Overall Costs and Benefits of the Project

- The cost/benefit justification should have already been stated in the feasibility study. This stage provides the opportunity to review the case in the light of more detailed information.

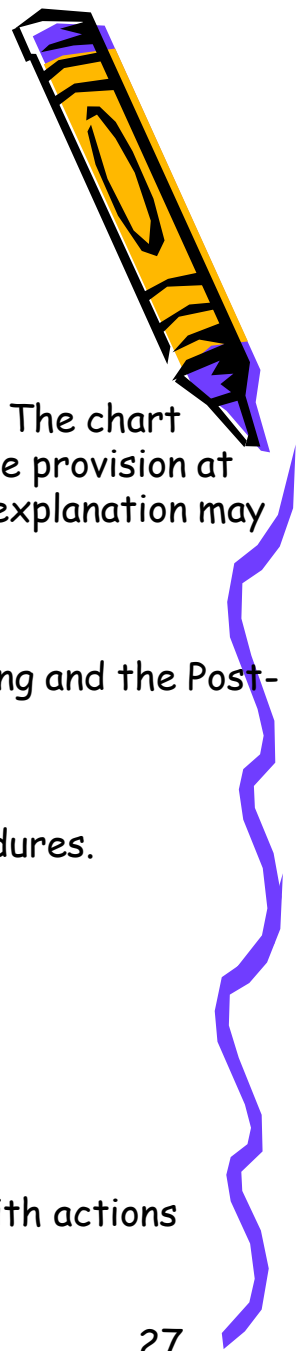
j) Ensure Management Systems are in place.

i) Document the Project Plan

- Once a viable plan has emerged (i.e. conflicts have been resolved, resource availability has been confirmed etc.)



Project Planning Involves cont..

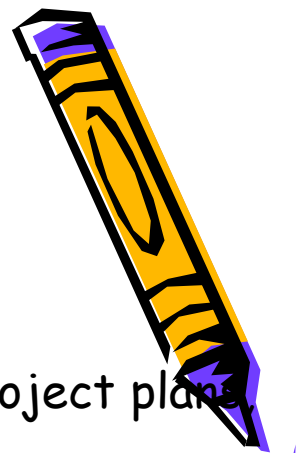


the Project Manager should produce the Project Plan covering:

- **Project Schedule.**
 - This should show major activities by sub-project on a bar chart or other diagram. The chart should also show project milestones and target dates. Show contingency as a single provision at the end. Include an overall project network showing the critical path. Narrative explanation may be included for clarification.
- **Major Checkpoints and Reviews.**
 - List the dates of Checkpoint Reports, Checkpoint Meetings, Steering Group Meeting and the Post-Implementation Review.
- **Deliverables.**
 - List the major products of the project with delivery dates and acceptance procedures.
- **Resources.**
 - Summarise the resource needs from the sub-project plans.
- **Costs and Benefits figures.**
 - Revise and refine as a result of completion of Definition and Planning.
- **Potential Problems.**
 - List any risks, problems or assumptions which may jeopardise the Plan, together with actions needed to correct the situation.
- **Appendices.**
 - Any useful supporting information including Sub-project Plans may be included.



Project Execution Cont....

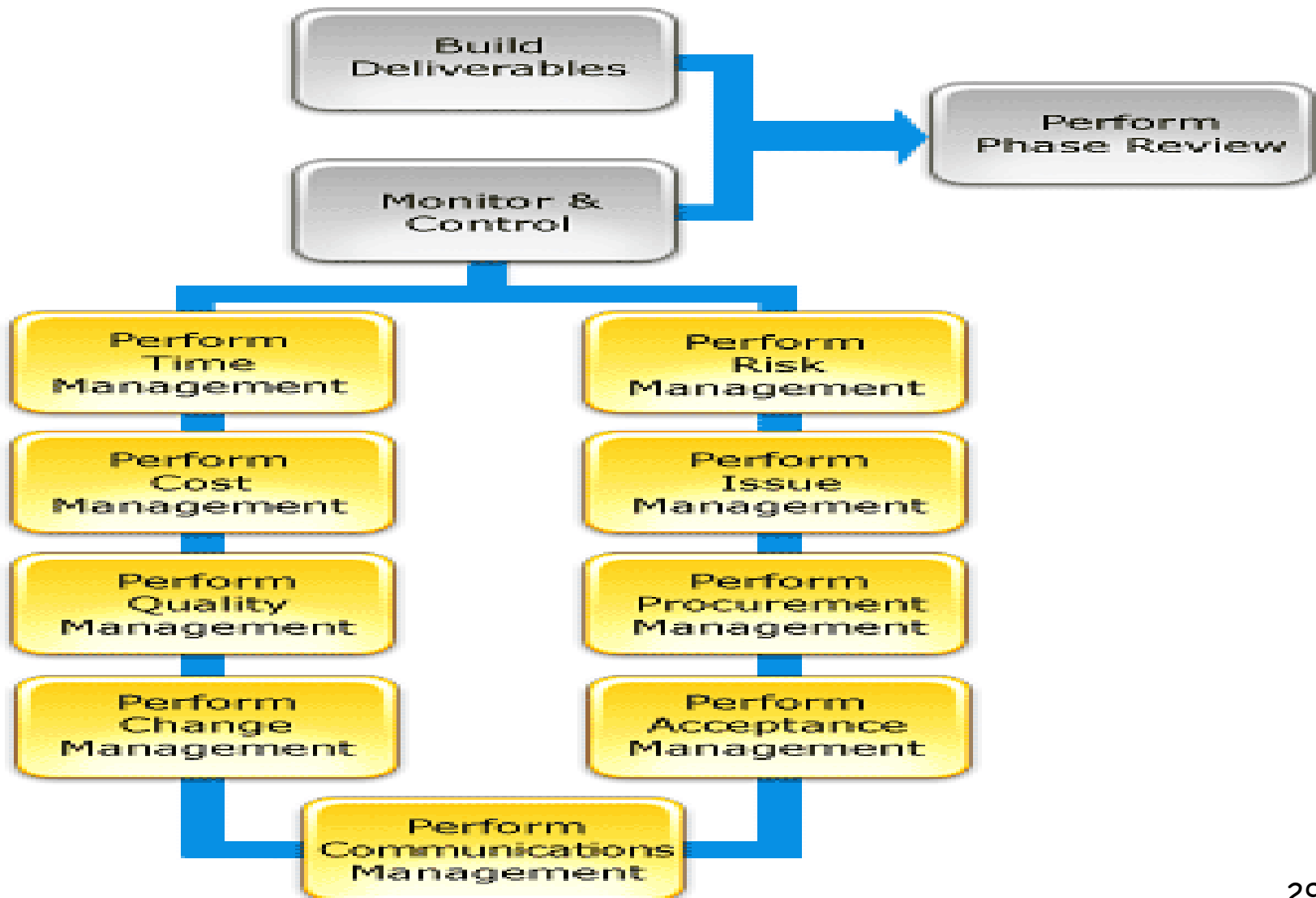


Project Execution

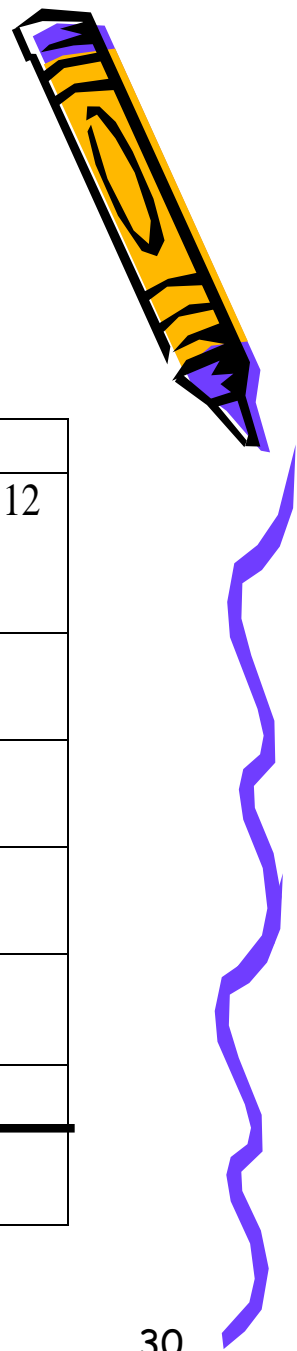
- With a clear definition of the project and a suite of detailed project plans, you are now ready to enter the Execution phase of the project.
- *This is the phase in which the deliverables are physically built and presented to the customer for acceptance.*
- While each deliverable is being constructed, a suite of management processes are undertaken to monitor and control the deliverables being output by the project.
- These processes include managing time, cost, quality, change, risks, issues, suppliers, customers and communication.
- Once all the deliverables have been produced and the customer has accepted the final solution, the project is ready for closure.
- *It is during this period that preparation of specifications for equipment and machinery, ordering of equipment, lining up software developer contractors, System analysis, designing of system, software development/coding, testing, checking, trial run and commissioning of the software take place during this phase. As far as the volume of work is concerned, 80 - 85% of project work is done in this phase only.*



Project execution



Project Execution Cont....



		MONTHS											
SUB PHASE NO	SUB-PHASE DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
I	software Analysis												
II	Hardware Selection												
III	Software Design												
IV	Hardware testing												
V	Software testing/implementation												



Project Closure

- Project Closure

- Project Closure

- ☐ involves releasing the final deliverables to the customer,
 - ☐ handing over project documentation to the business,
 - ☐ terminating supplier contracts, releasing project resources and communicating project closure to all stakeholders.
 - ☐ The last remaining step is to undertake a Post Implementation Review to identify the level of project success and note any lessons learned for future projects.



Project Closure Cont....



For project personnel this phase is basically a clean-up task

- ☐ Drawing, documents, files, operation and maintenance manuals are catalogued and handed over to the customer.
- ☐ The customer has to be satisfied with guarantee-test runs.
- ☐ Any change required at the last minute for fulfillment of contractual obligations in respect of performance has, therefore, to be completed during this phase to the satisfaction of the customer.
- ☐ Project accounts are closed, materials reconciliation carried out, outstanding payments made, and dues collected during this phase.
- ☐ The most important issue during this phase is planning of the staff and workers involved in execution of the project. All project personnel cannot be suddenly asked to go.

