Module 1 : Project Management Foundation

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ILOC: Project Management (Autonomy)

Agenda

- Course Objectives
- Course Outcomes
- Prerequisites
- Text / Reference Books
- Assessment Methods
- Introduction to Project Management Foundations

Course Objectives

- To familiarize the students with the use of a structured methodology/approach for each and every unique project.
- Awareness about the utilizing project management concepts, tools and techniques in managing the Project.
- To appraise the students with the project management life cycle and make them knowledgeable about the various phases from project initiation through closure
- Focus on Planning and Risk management techniques in the development of a Project
- Effective Techniques for Monitoring and Control of the Projects.
- Awareness about the ethics to be followed in a project and quality of leadership.

Course Outcomes

- To understand the Necessity of Project management and Project Management Knowledge Areas.
- Apply selection criteria and select an appropriate project from different options.
- Perform SWOT Analysis and Prepare a Work Breakdown Structure for a project and develop a schedule based on it.
- Identify the Risk and solution to it.
- To understand Project Monitoring and Control using various Techniques
- Project Management towards Effective Leadership and Quality of the project.

Prerequisites & Text Books

- Software Engineering and its concepts.

Text Books

- Jack Meredith & Samuel Mantel, Project Management: A managerial approach, Wiley India, 7th Ed.
- Gido Clements, Project Management, Cengage Learning.
- Gopalan, Project Management, , Wiley India
- John M Nicholas, Herman Steyn , Project Management for Engineering, Business and Technology, Routledge, Taylor Francis Group.

Text / Reference Books

Reference Books

- Dennis Lock, Project Management, Gower Publishing England, 9 thEd.
- Managing Information Technology Project, 6th Edition, by Kathy Schwalbe, Cengage Learning publication

Assessment Methods

- Internal Assessments : 40 Marks
  - Mid Term Test 1 – 20 Marks (After completion of 50% syllabus)
  - Continuous Assessments – 20 Marks
- End Semester Examination : 60 Marks

Continuous Assessment Rubrics

Sr. No	Rubrics	Marks
1	*Certificate course for 4 weeks or more:- NPTEL/ Coursera/ Udemy/any MOOC	10 marks
2	Wins in the event/competition/hackathon	10 marks
3	Content beyond syllabus presentation	10 marks
4	Creating Proof of concept	10 marks
5	Mini Project / Extra Experiments/ Virtual Lab	10 marks
6	GATE Based Assignment test/Tutorials etc	10 marks
7	Participation in event/workshop/talk / competition followed by small report and certificate of participation relevant to the subject (in other institutes)	5 marks
8	Multiple Choice Questions (Quiz)	5 marks
9	Case study, Presentation, group discussion, technical debate on recent trends in the said course	10 marks
10	Project based Learning and evaluation / Extra assignment / Question paper solution	10 marks
11	Multiple Choice Questions (Quiz)	5 marks
12	Literature review of papers/journals	5 marks
13	Library related work	5 marks

*For sr.no.1, the date of certification exam should be within the term and in case a student is unable to complete the certification, the grading has to be done accordingly.

Module 1 : Project Management Foundations

- Definition of a project
- Project v/s Operations
- Necessity of project management
- Triple constraints
- Role of project manager
- Project life cycles (typical & atypical)
- Project phases

Definition of a Project

- A project is a “temporary endeavor undertaken to create a unique product, service or result”
- A project ends when its objectives have been reached or the project has been terminated.
- A project can be large or small and take a short or long time to complete.

Reference: Managing Information Technology Project, 6th Edition, by Kathy Schwalbe, Cengage Learning publication

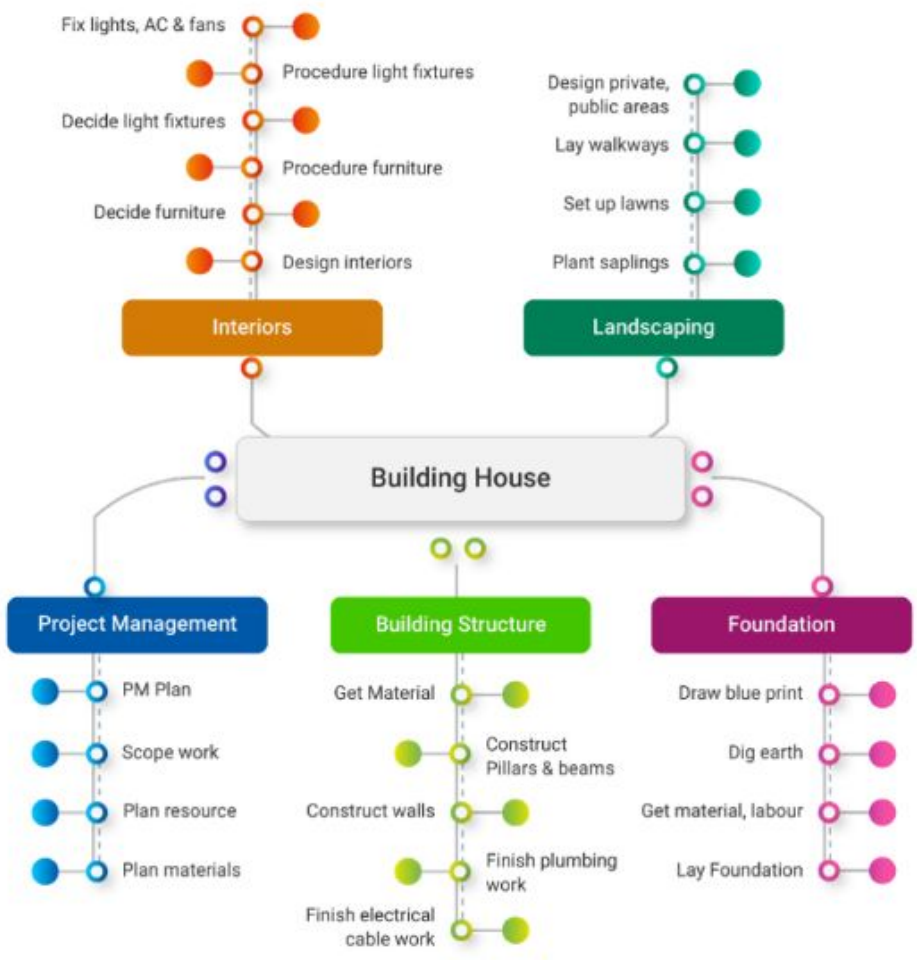
What is a Project?

A **series of activities and tasks** that

- Have a **specific objective** to be completed within certain specifications;
- Have **defined start and end dates**;
- Have **funding limits** (if applicable);
- **Consume resources** (i.e., money, people, & equipment)

Harold Kerzner, International Institute of Learning, Inc.

What is a Project?



ILOC: Project Management (Autonomy)

What is Project Management?

- The art of **organising, leading, reporting and completing** a project through people

ILOC: Project Management (Autonomy)

What is Project Management?

- **Project** : A group of milestones or phases, activities or tasks that support an effort to accomplish something
- **Management** : is the process of Planning, Organizing, Controlling and Measuring.

"**Project management** is the **planning, organizing, directing, and controlling of company resources** for a relatively short term objective that has been established to complete specific goals and objectives."

Harold Kerzner, International Institute of Learning, Inc.

Why is Project Management used for?

- It is necessary to **Track or Measure the progress** we have achieved towards a Goal we wish to accomplish
- We use Project Management to **Aid us in Maximizing and Optimizing** our resources to accomplish our goals
- **Examples:**
  - developing a new product or service
  - effecting change in a structure, staffing or style of an organisation
  - designing a new transportation vehicle
  - developing or acquiring a new or modified information system
  - constructing a building or facility

Why is Project Management used for?

- **Examples:**
  - building a water system for a community in a developing country
  - running a campaign for political office
  - implementing a new business procedure or process
  - METEOR an automatic underground railway in Paris
  - implementing SAP in multi-sites company
  - the football world cup in Paris in 98
  - from 8 to 10 digits numbering in a phone system

What does Project Management entail?

- **Planning :** is the most critical and gets the least amount of our time
- **Organizing** : Orderly fashion (Contingent/Prerequisites)
- **Controlling :** is critical if we are to use our limited resources wisely
- **Measuring** : To determine if we accomplished the goal or met the target?

Measuring… Tracking and Reporting Progress

- Are we efficient?
- Are we productive?
- Are we doing a good job?
- What is the outcome?
- Is it what we wanted to be?

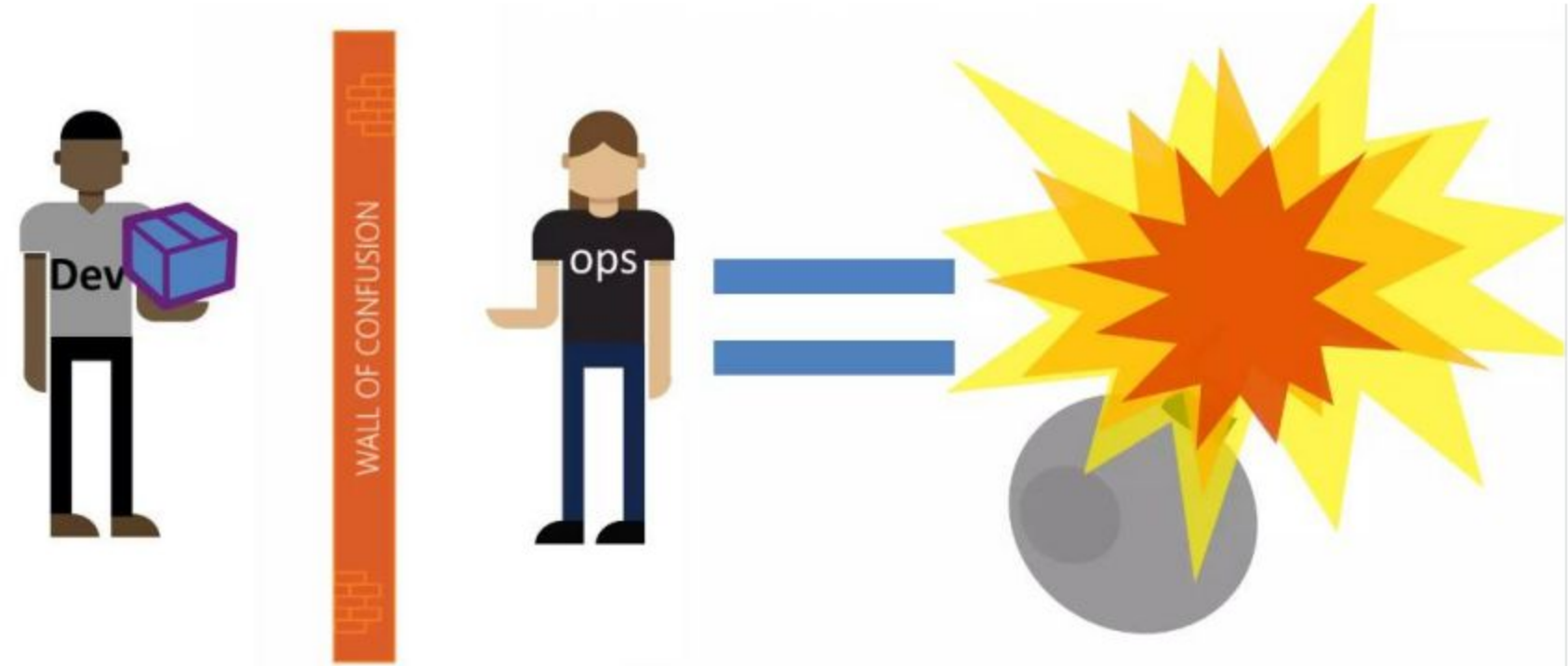
If you can’t plan it, You can’t do it

If you can’t measure it, you can’t manage it

Advantages...

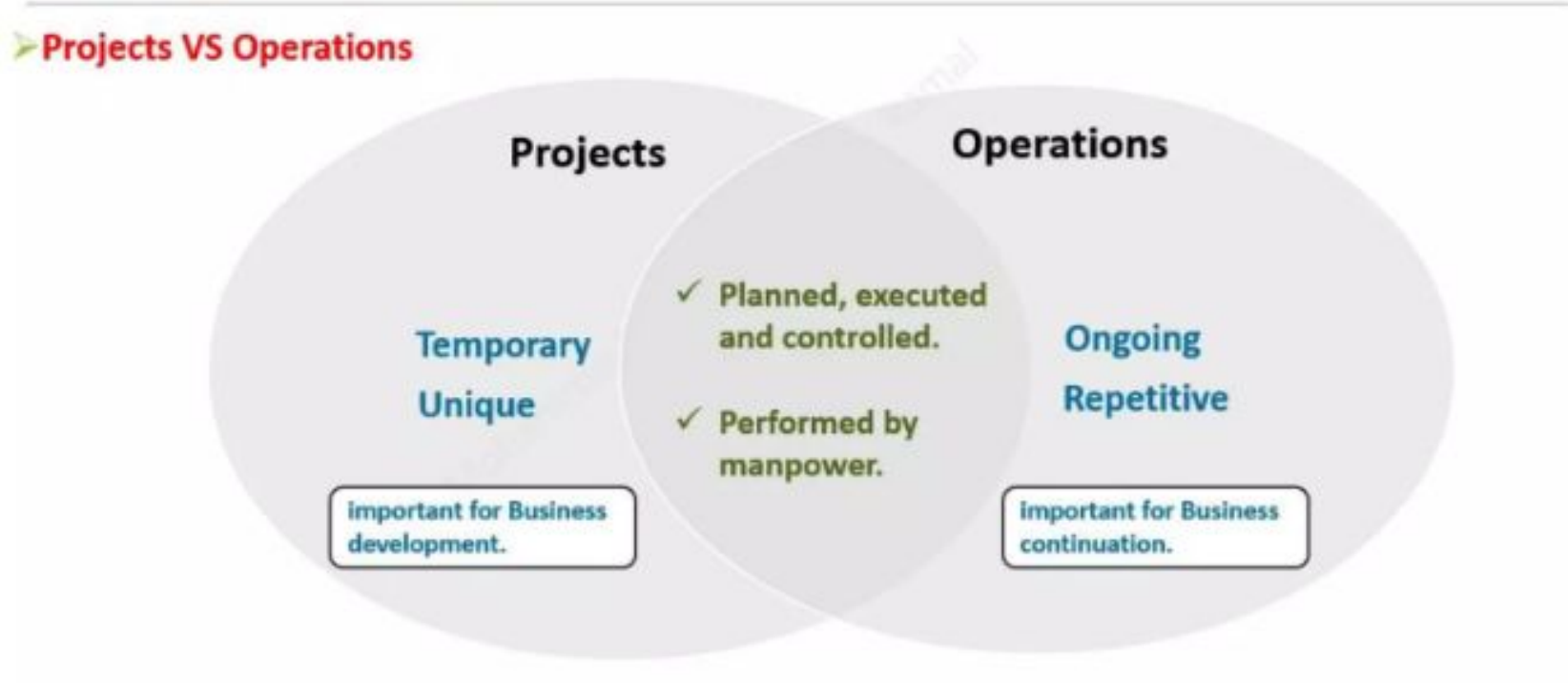
- Better control of financial, physical and human resources.
- Improved customer relations
- Shorter development times
- Lower costs and improved productivity
- Higher quality and improved reliability
- Higher profit margins
- Better internal coordination
- Positive impact on meeting strategic goals
- Higher worker morale

What is Project Management?



ILOC: Project Management (Autonomy)

Project Vs Operations



Project Vs Operations

Projects may intersect with operations at various points during the product life cycle, such as:

- When **developing** a new product, **upgrading** a product, or **expanding** outputs.
- While **improving operations** or the product development process.
- At the **end of the product life cycle**
- At each **closeout phase.**

Project Vs Operations

- Operations are the ongoing execution of activities and they follow an organization's procedures to produce the same result or a repetitive service.
- Operations are permanent in nature.
- **Examples of operations**: Production, manufacturing, and accounting etc

Project Vs Operations

- Operations do not produce new things, but they are necessary to maintain and sustain the system.
- Operations are used to run regular business models, achieve the goals of the business, and support the business.
- Operations are different from projects, which are known for their uniqueness.
- Operations are permanent, and their only constraint is to make a profit for the organization.

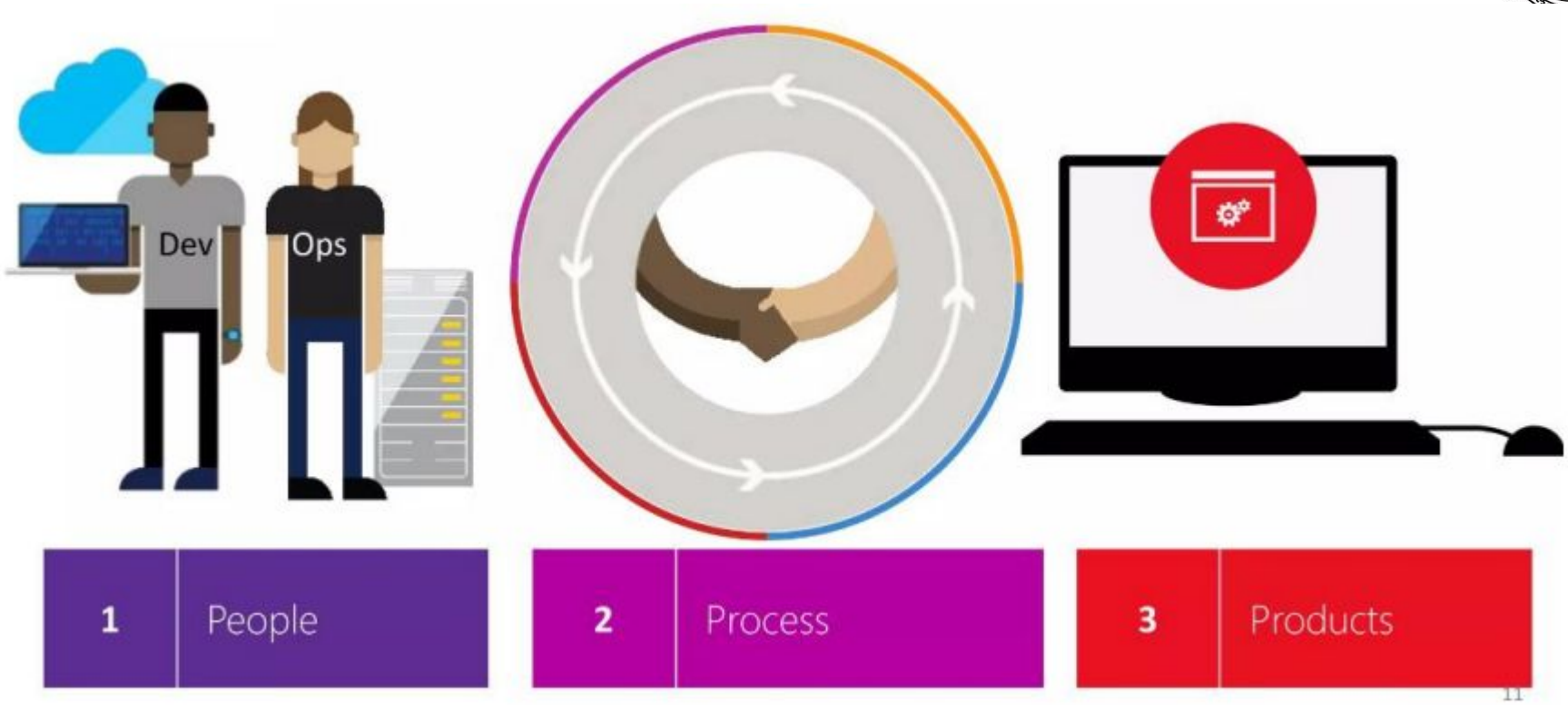
Project Vs Operations

- Projects are unique and temporary, while operations are ongoing and permanent with a repetitive output.
- Projects have a fixed budget, while operations have to earn a profit to run the business.
- Projects are executed to start a new business objective and terminated when it is achieved, while operational work does not produce anything new and is ongoing.
- Projects create a unique product, service, or result, while operations produce the same product, aim to earn a profit and keep the system running.

Project Vs Operations

- There are more risks in projects as they are usually done for the first time, while in operations there are fewer risks as they are repeated many times.
- Projects are performance intensive while operations are efficiency intensive.
- Projects are managed through project management and operations require business process management.

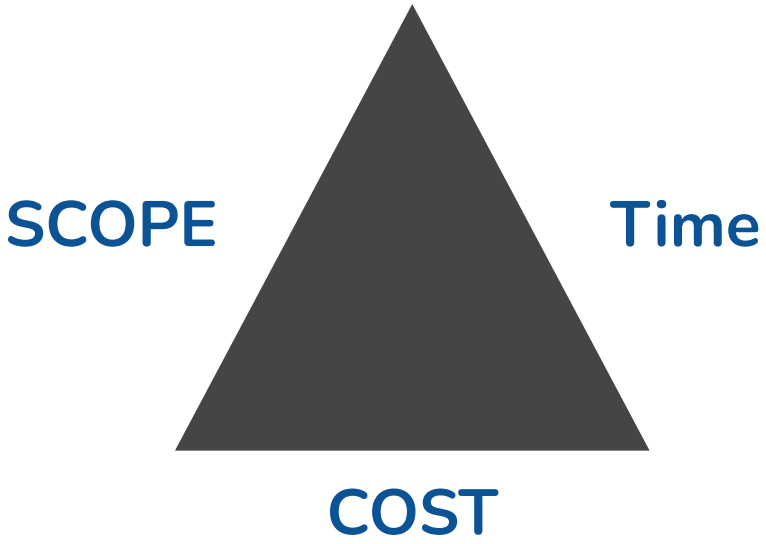
What is Project Management?



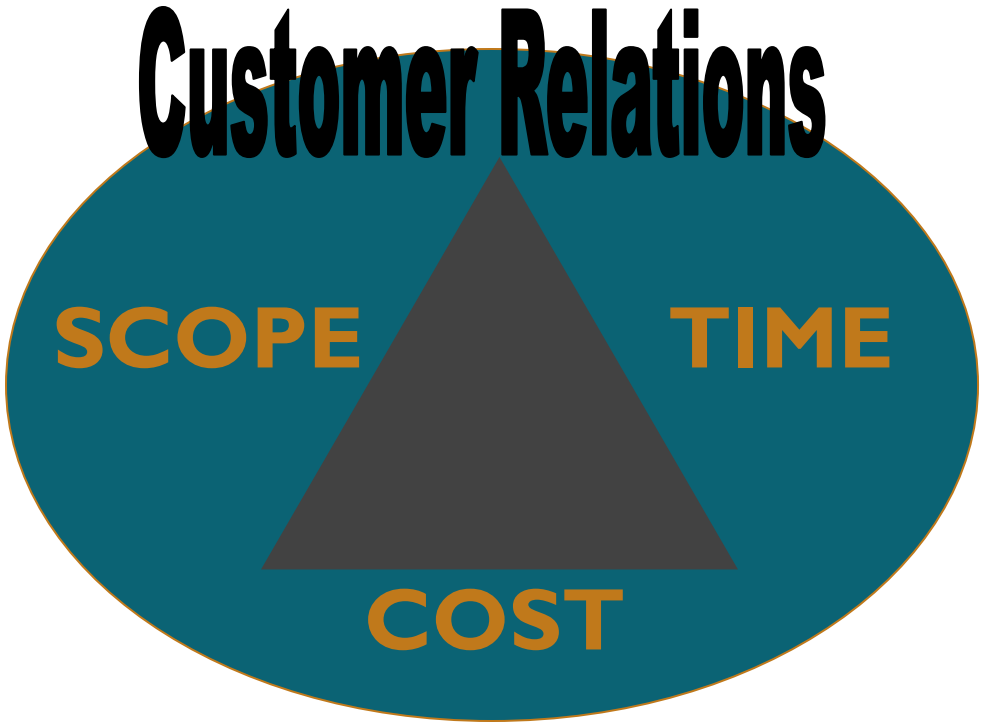
ILOC: Project Management (Autonomy)

The Triple Constraint (3 Project Constraints)

- SCOPE
- TIME
- COST



The Project Triangle



ILOC: Project Management (Autonomy)

Attributes of a Project

- Time frame
- Purpose
- Ownership
- Resources
- Roles
- Risks and Assumptions
- Interdependent tasks
- Organizational change
- Operating in an environment larger than the project itself

Group Exercise…

- Write down three attributes of a good Project Manager

Time Duration : 2 Minutes.

All the Best

Project Manager Role…

- A Good Project Manager
  - Takes ownership of the whole project
  - Is proactive not reactive
  - Adequately plans the project
  - Is Authoritative (**NOT** Authoritarian)
  - Is Decisive
  - Is a Good Communicator
  - Manages by data and facts not uninformed optimism
  - Leads by example
  - Has sound Judgement
  - Is a Motivator
  - Is Diplomatic
  - Can Delegate

Role of Project Manager

Project Manager must have following skills:

- Leadership
- People management (customers, suppliers, functional managers and project team)
- Effective Communication (verbal and written)
- Influencing
- Negotiation
- Conflict Management
- Planning
- Contract management
- Estimating
- Problem solving
- Creative thinking
- Time Management

Stakeholder Management

" A person or group of people who have a vested interest in the success of an organization and the environment in which the organization operates"

Group Exercise…

- Write down three typical project stakeholders

Time Duration : 2 Minutes.

All the Best

Exercise : Typical Stakeholders

- Sponsor
- Funding Body
- Customer
- Suppliers
- End User
- HSE/Environmental Agency
- Maintenance Team
- Neighbours/Community/Shareholders
- Fusion Community
- Interfaces

Stakeholder Engagement Process

- Identify Stakeholders
- Assess needs
- Define actions
- Establish communication channels
- Gather feedback
- Monitor and review

PROJECT LIFE CYCLE

Project Life Cycle

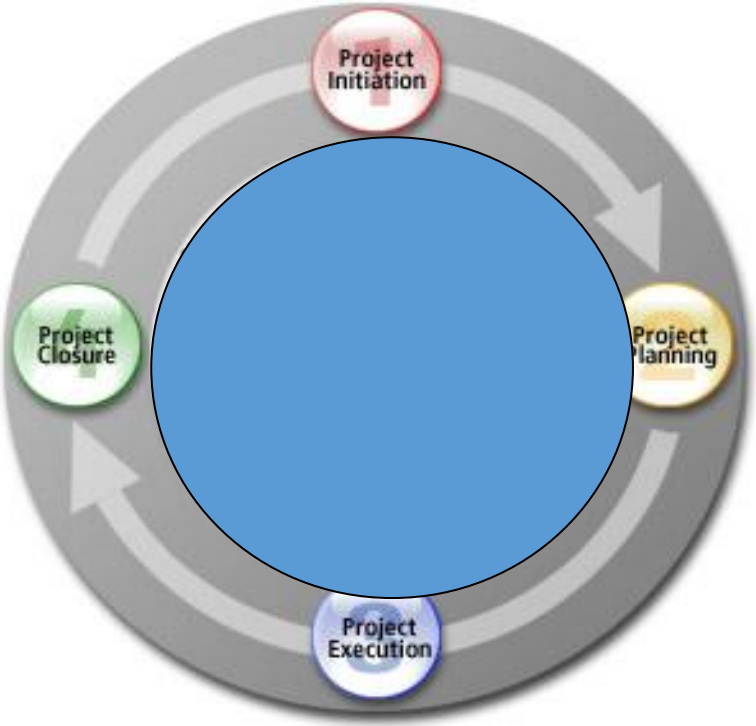
- Project management is about acquiring or achieving the project goal
- Most projects need to be broken down into a logical sequence of 'phases', known as *the project life cycle*.
- Each project phase is marked by the completion of one or more **deliverables.**
  - The term **deliverables** is a **project** management term that's traditionally used to **describe** the quantifiable goods or services that must be provided upon the completion of a **project**.
  - **Deliverables** can be tangible or intangible in nature.

Project Phases and Project Life Cycle

- A **project life cycle** is a collection of project phases that defines:
  - What work will be performed in each phase.
  - What deliverables will be produced and when.
  - Who is involved in each phase.
  - How management will control and approve work produced in each phase.
- Project life cycles can range from predictive or plan driven approaches to adaptive or change driven approaches

Project Phases and Process Groups

- Project initiation
- Project planning
- Project execution and control
- Project closure

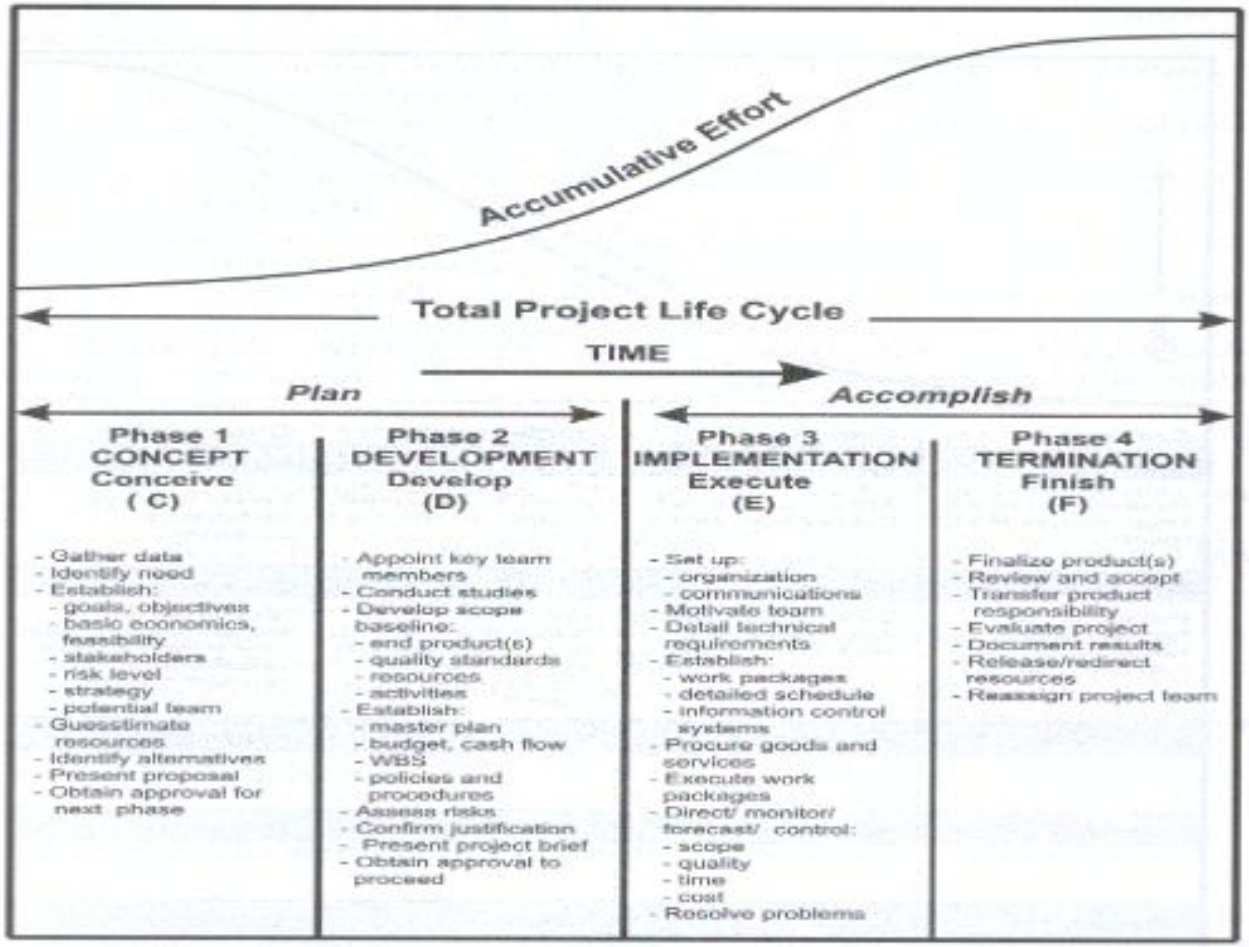


Process Groups

Project Initiation	Project Planning	Project execution and control	Project closing
• Scope identification • Team set up • Project definition • Project proposal • Outling project risks	• WBS • cost estimation • Scheduling • Risk Analysis	• Network diagrams • Control and Manage Risks • Reporting	Hand over Commission

Project life cycle

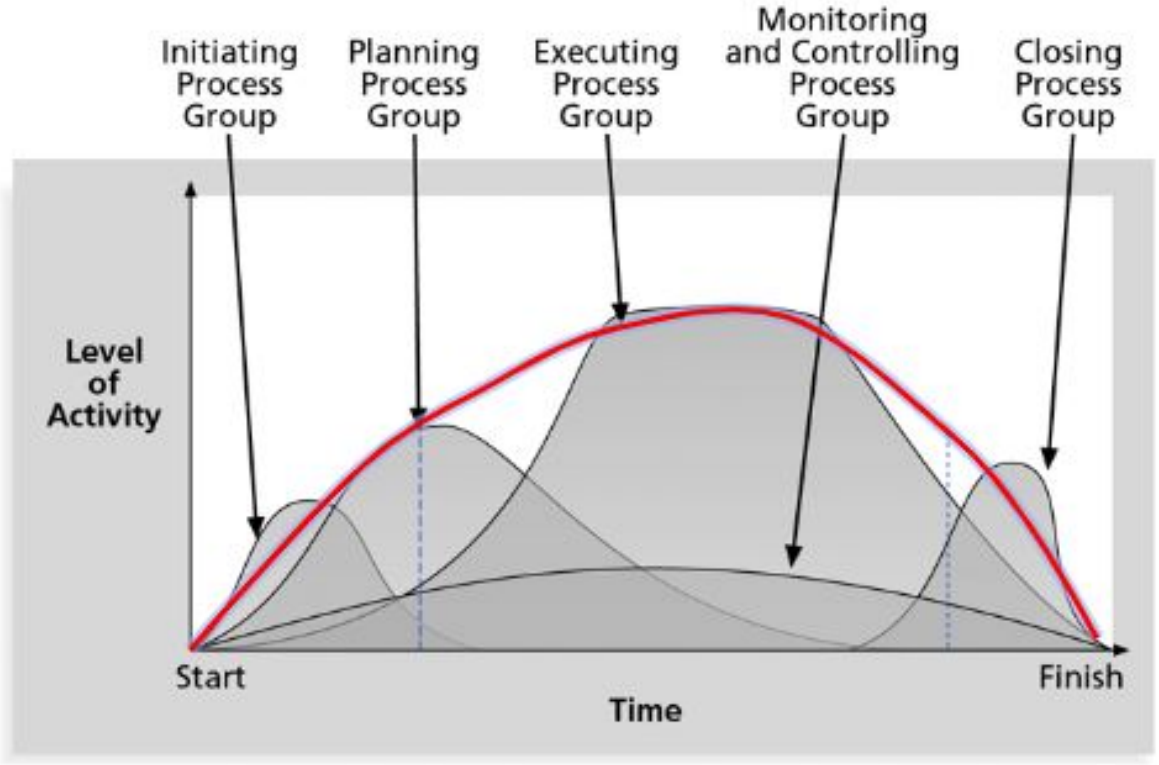
Project Life Cycle : Activities



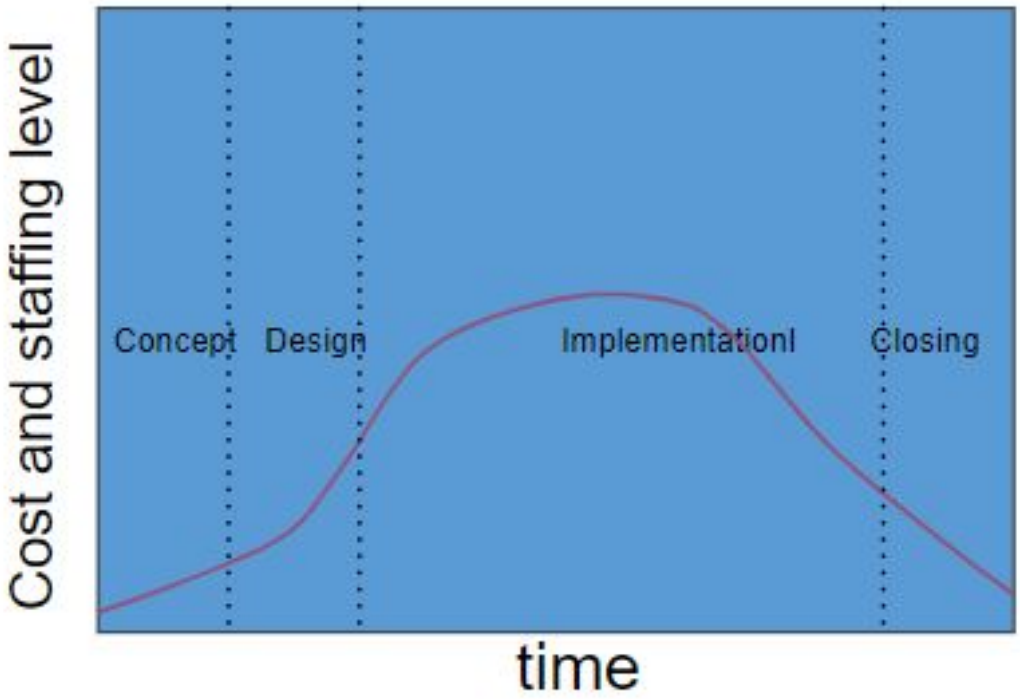
Stage Gates

- Each phase ends with a review of the deliverables and performance in order to detect and correct errors and to decide if the project should continue into the next phase.
- The phase end reviews are often called **phase exits** or **stage gates**.

Level of Activity and Overlap of Process Groups Over Time



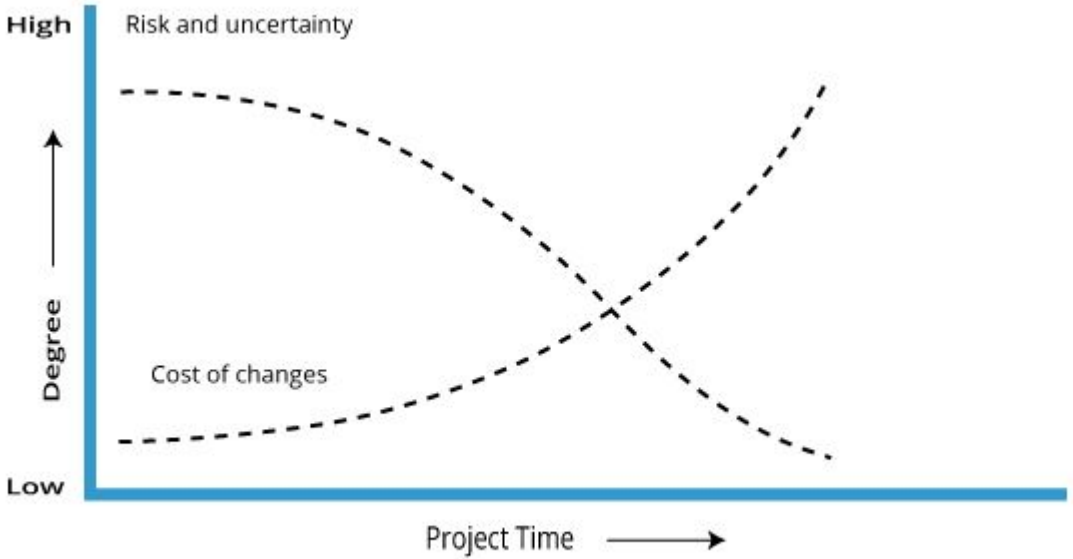
Project Life cycle …..



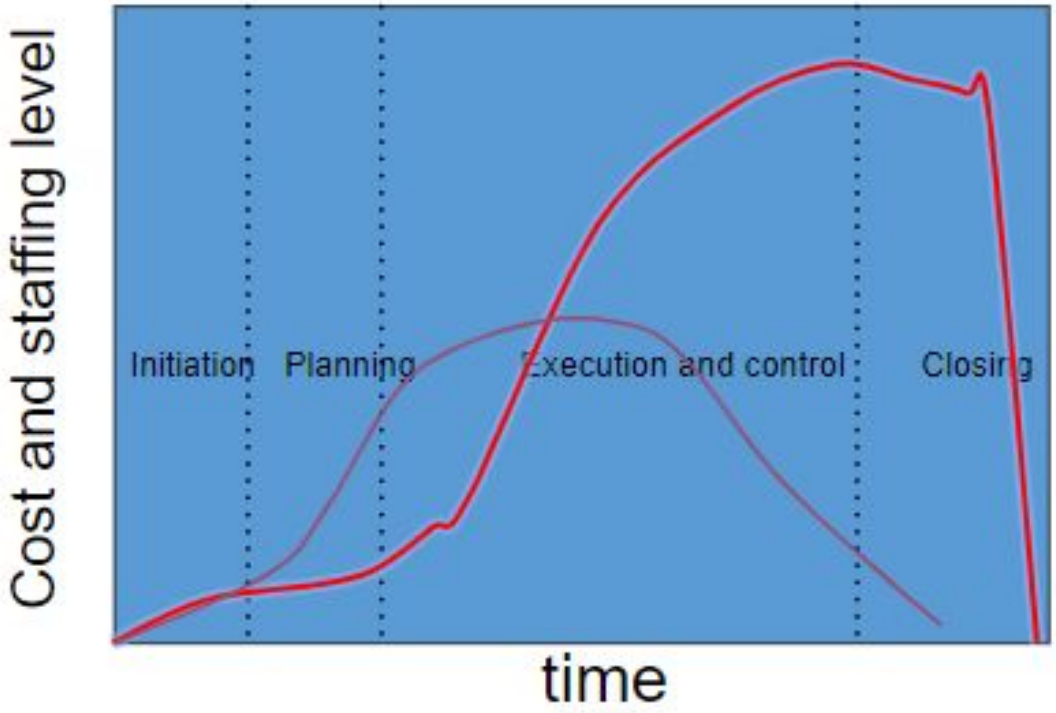
More on Project Phases.....

- In the early phases of a project life cycle:
  - Resource needs are usually lowest.
  - The level of uncertainty (risk) is highest.
  - Project stakeholders have the greatest opportunity to influence the project.
- In the middle phases of a project life cycle:
  - The certainty of completing a project increases.
  - More resources are needed.
- In the final phase of a project life cycle:
  - The focus is on ensuring that project requirements were met.
  - The sponsor approves completion of the project.

Life Cycle : Risk and Uncertainties

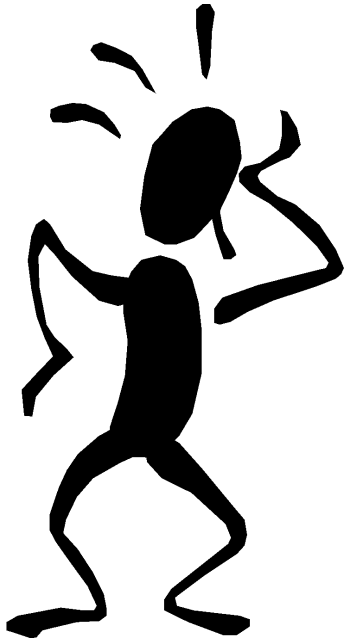


Project Life Cycle : Ideal V Typical



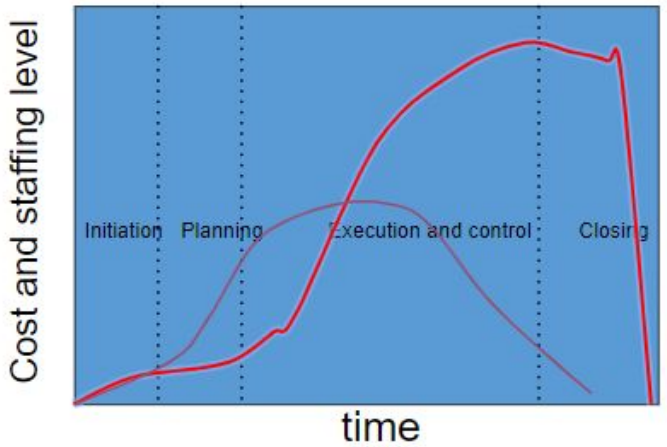
Exercise: Ideal V Typical

- What does the chart tell you about typical v ideal project life cycle?



Answer: Ideal V Typical

- Many projects don't get adequate resources in the early stages
- Low resourcing in the planning stage results in delays in completing the project on time, to the right quality and within the budget



Life Cycle : Expenditures

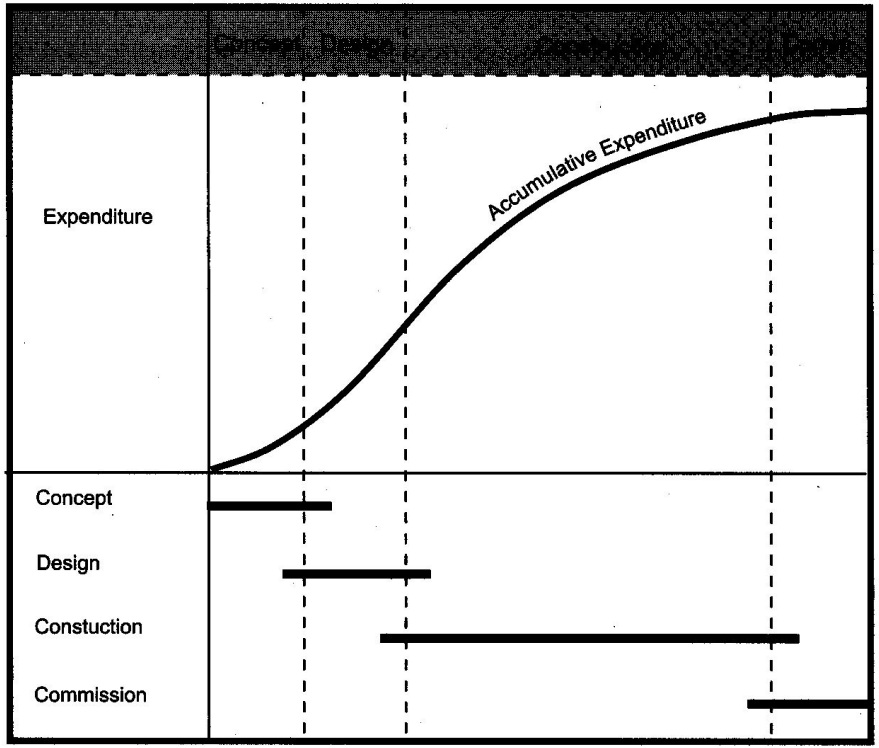
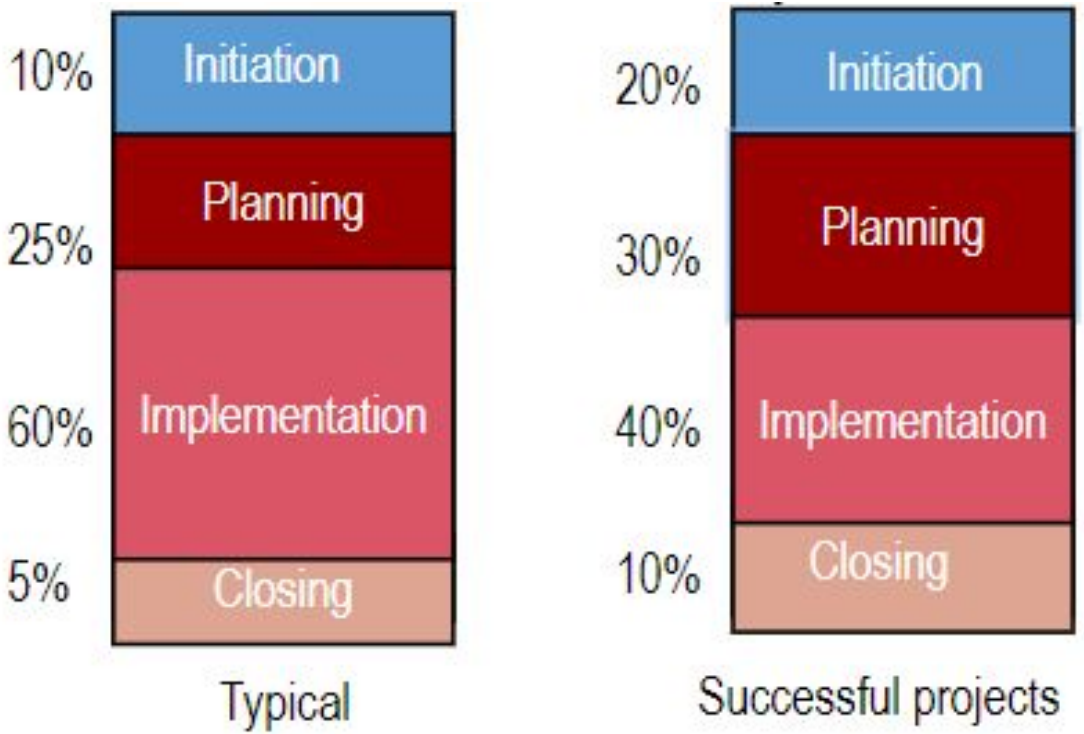


Figure 4: Project Life-Cycle (showing the barchart of the four main activities overlapping the project phases)

Allocation of Time and Money..



Sydney Opera House

- Good or bad project?

Sydney Opera House

- *Planned - 1959 to 1963 (4 years)*
  - *$7 million*
- *Actual - 1959 to 1973 (14 years)*
  - *$100 million*