

Project Management Techniques

What Is a Project?

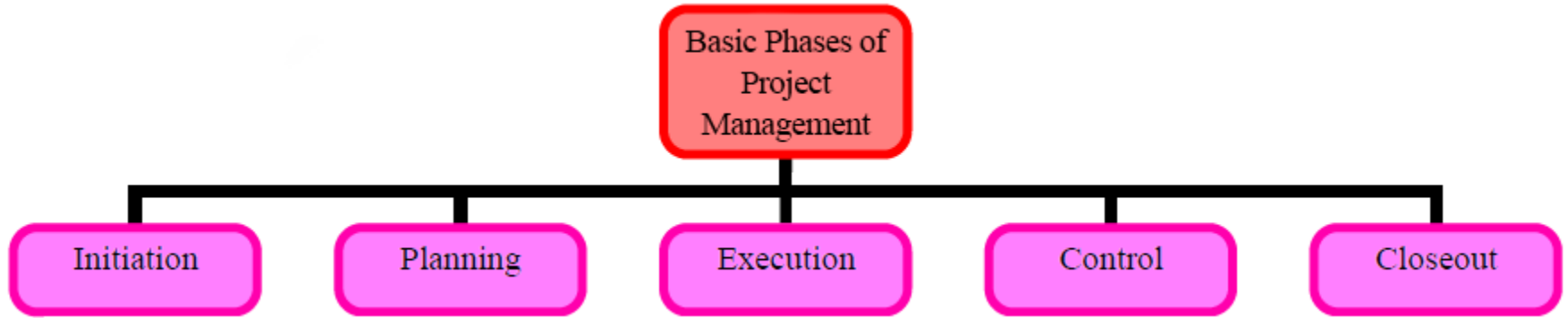
- ❑ A **project** is “a temporary endeavor undertaken to create a unique product, service, or result.”*
- ❑ **Operation** is work done to sustain the business.
- ❑ A project ends when its objectives have been reached, or the project has been terminated.
- ❑ Projects can be large or small and take a short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

*PMI, A Guide to the Project Management Body of Knowledge (PMBOK® Guide) (2004), p. 5.

A project:

- ❑ Has a unique purpose.
- ❑ Is temporary.
- ❑ Is developed using progressive elaboration.
- ❑ Requires resources, often from various areas.
- ❑ Should have a primary customer or sponsor.
- ❑ The project sponsor usually provides the direction and funding for the project.
- ❑ Involves uncertainty.

Basic Phases of Project Management



- Initiating
- Planning
- Executing
- Monitoring
- Closing

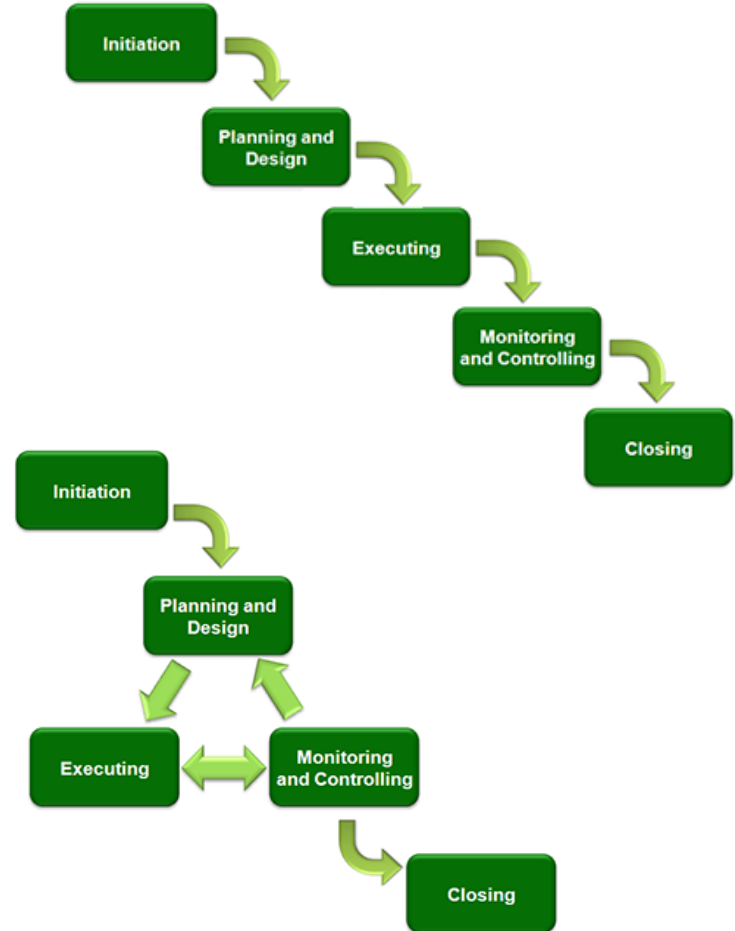
Approaches

Phase driven approach (**Waterfall**)

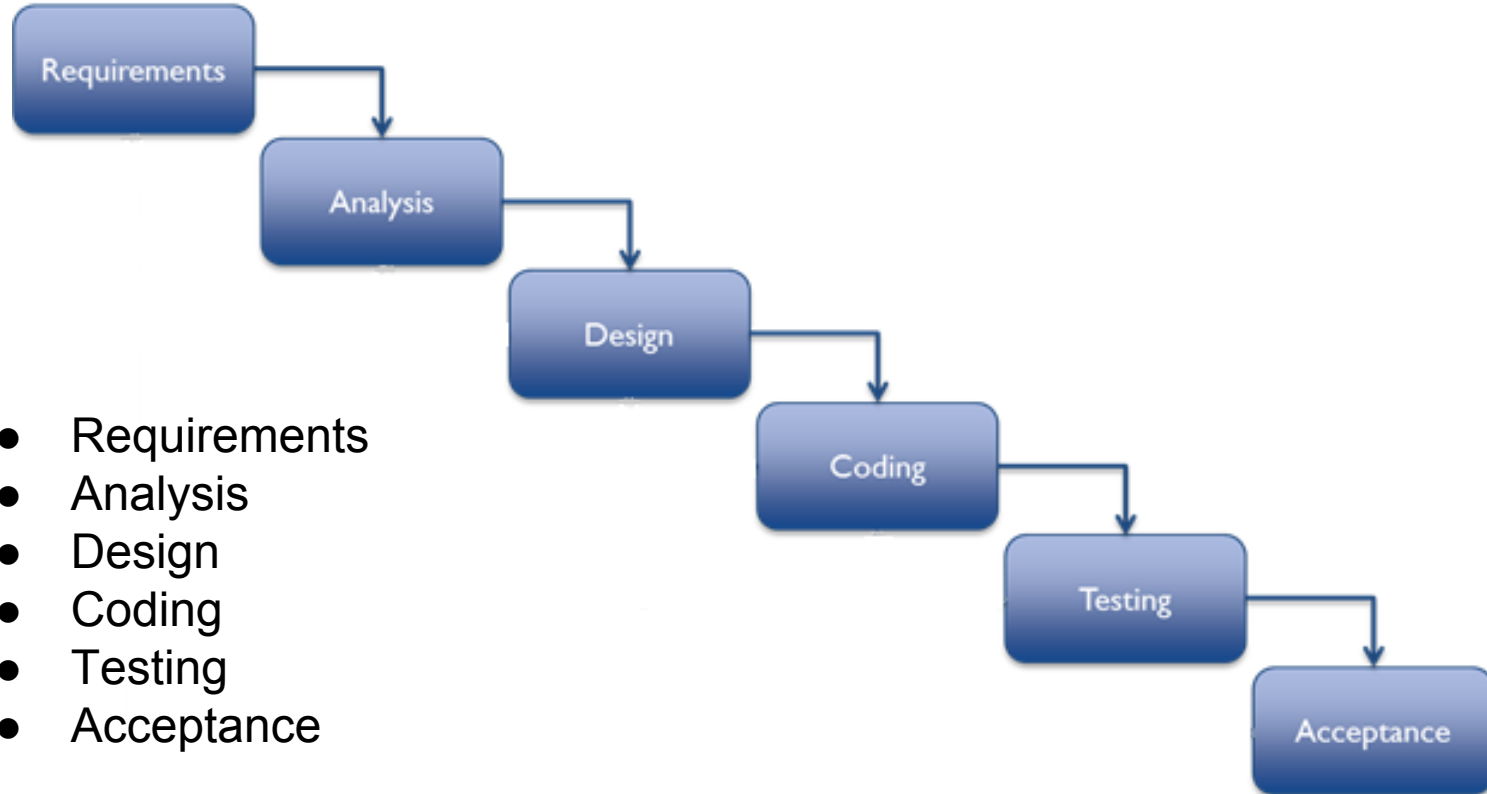
- Familiar
- Clear goal and solution
- Clear scope and deliverables
- Familiar technology

Adaptive approach (**Agile**)

- Define what to achieve with each iteration
- Each iteration has it's own closing
- Iterating to get close to the final goal



Software development phases



Initiating

I-Problem statement,e.g.,*not enough resources (equipment,people,funding).*

II-Project goal in the form of a statement,e.g.,*We are developing novel natural and intuitive user interfaces (NUI's) to interact with components and features in cars.*

A.Define Objectives,e.g.,Quality objectives,Technical objectives,Performance objectives

III-Choosing a strategy ,e.g.,*Brainstorming and generating possible strategies (it should satisfy the project objectives)*

A.Feasible ,e.g.,python 3.0 or 2.7(technical feasibility)

B.Risks should be acceptable

IV-Gathering requirements

V-assumptions

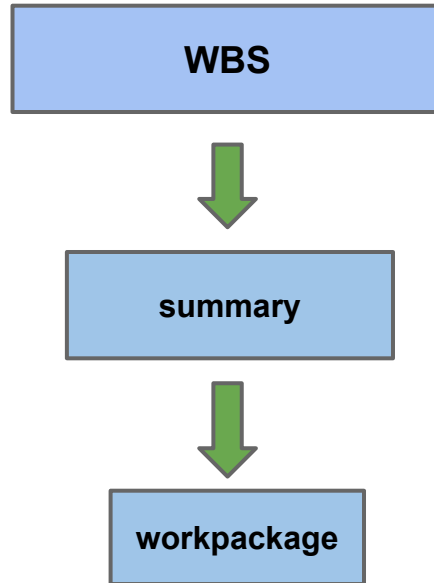
VI-Deliverables (products and services)

VII-Statement of work(what is included/excluded)

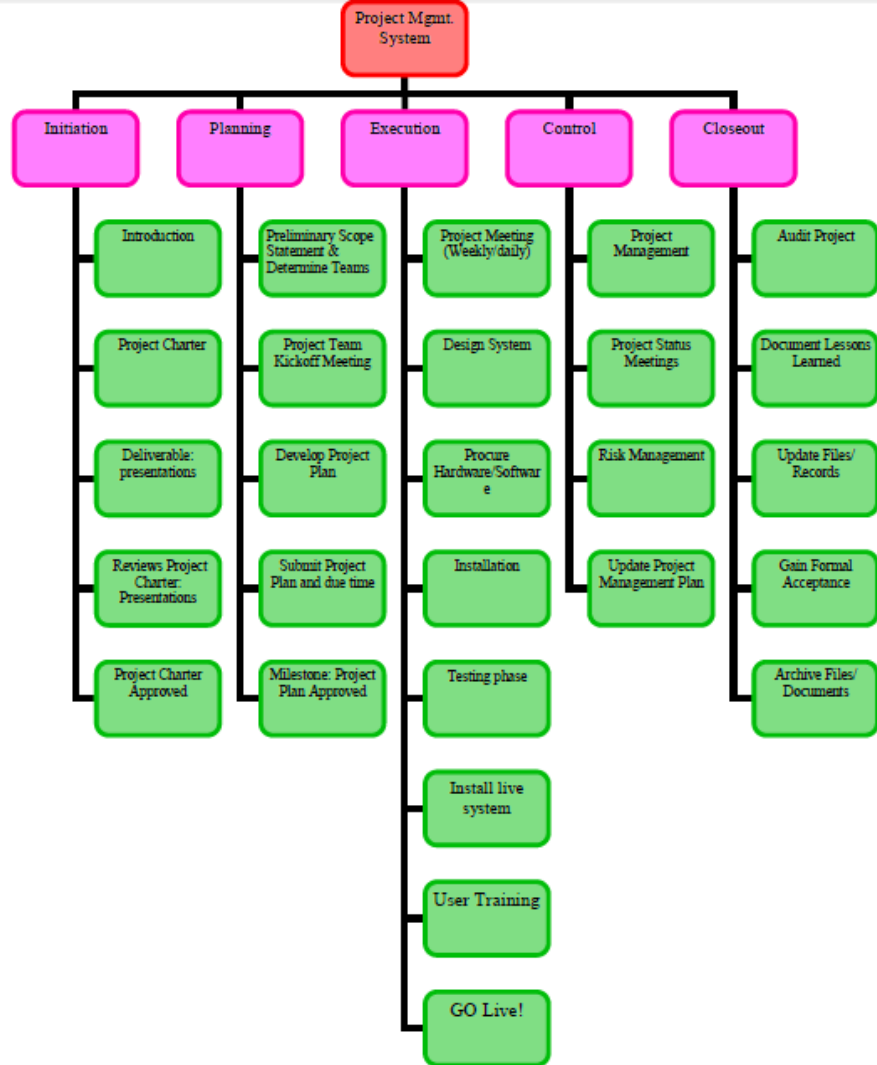
VIII-Project charter

Planning

- **Work Breakdown Structure (WBS)**



WBS Summary treeview



Project Schedule

- Tasks in right sequential order
- Estimated time for each task
- Assign tasks to team members
- Calculate the duration of each task

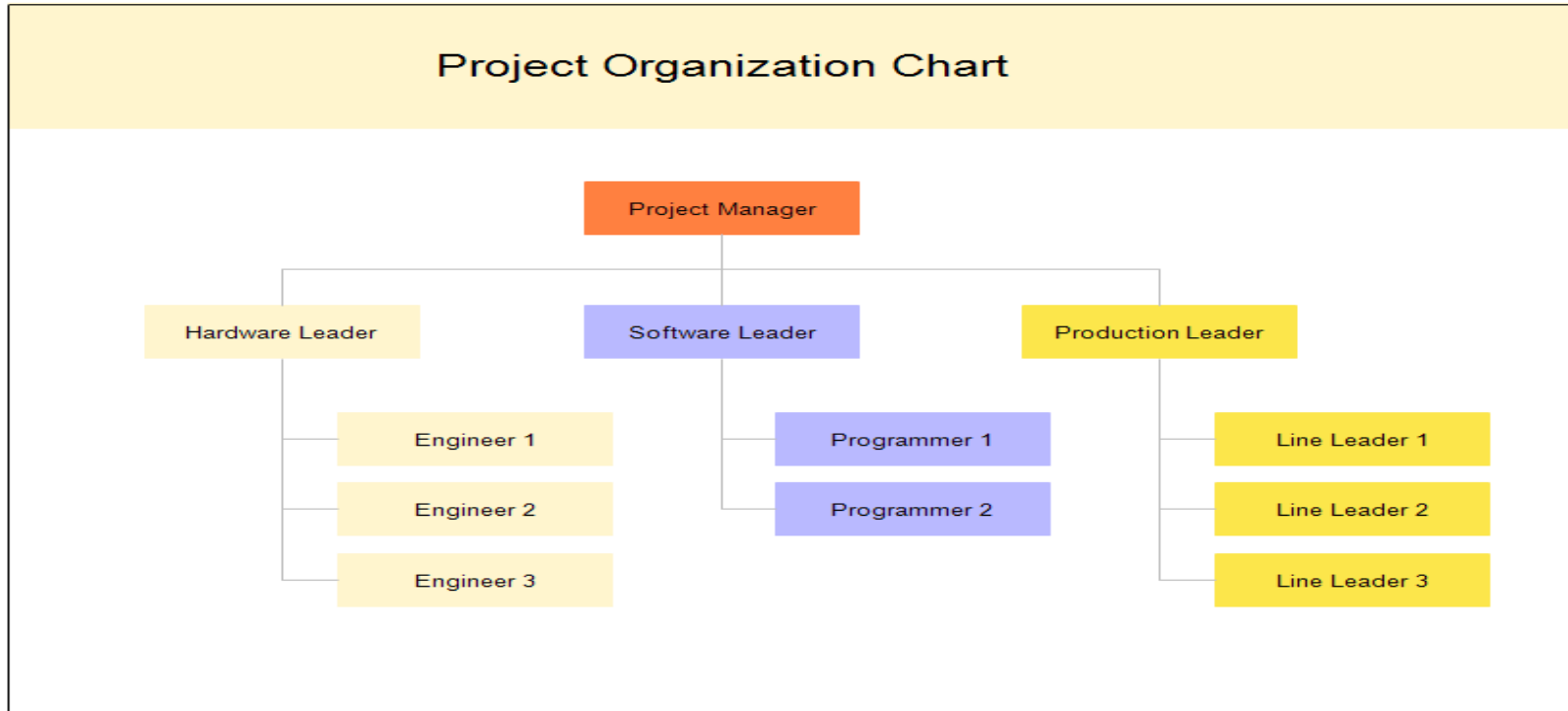
Responsibility Matrix

- Assign people to tasks
- Document the responsibilities

PATCO Philadelphia Waterfront Transit Expansion Alternatives Analysis									
Project Schedule									
	2007	2008				2009			
	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Public Outreach and Agency Coordination									
Review Existing Conditions									
Purpose and Need Statement									
Travel Demand Forecasting									
Definition of Transportation Alternatives									
Conceptual Engineering and Cost Estimates									
Evaluate Alternatives									
Select Locally Preferred Alternative									
Financial Planning									
Application to FTA for Entry into Preliminary Engineering									
Implementation Plan/Next Steps									

Project Organization Chart

Reporting structure for people involved with or working on project



Executing process

Starts when the project plan has been approved and project can finally begin.

1. Procurement

- telling your in-house team that it's time to report for duty
 - Asking them for proposals

2. Team dynamics

- Forming (Individuals into groups)
 - Knowing the goal but not sure who does what
- Storming (power struggles)
 - Difficulty making decisions because of disagreement
- Norming (finally having the teams)
- Performing (knowing the goal)
 - Working together

3. **Motivating** team members

- Building **relationship** with the team members
 - What they are **responsible** for and what PM **expect** of them
- Give people **specific** and achievable **goals**.
- Providing **support and help** remove obstacles that get in the way
- **Respecting** team members
- Providing **feedback** quickly to people
 - If someone does something wrong, quickly to explain what they should be doing in a tactful way.
- Telling the **truth**
 - Earn people's trust by telling the truth, even if they don't like it
- **Communicate** regularly with team members.
- Handling people problems quickly if they do come up

4. **Gathering data** and information about

- what's been done and what's left to do
- Find out **when** tasks actually **start**
 - if it starts two weeks late, it could delay the project
- Gathering actual **work hours**, or actual duration
 - To get a better picture of task progress and the labor costs
- Ask how much work or duration **still remains**
 - How much longer a task will run
 - Whether or not the original estimate was on target
- Set up an **automated way to obtain** the **information** about tasks
 - Through email, a web form, or an enterprise-wide project-status reporting tool

Evaluating progress

1. Examine the project's schedule
 - Because delays can lead to other problems.
2. Budget management
 - Cost issues can arise if tasks take more hours to complete
 - Higher resource costs
 - Paying overtime
3. Get reporting on progress
 - Accurate
 - Timely (e.g. weekly status report at 11am on Fridays)
 - Meaningful
 - Adjust reporting system to ensure that the project communication is as effective as possible.
4. Creating cumulative status report

Control and Monitoring progress

1. Managing **changes**

- Having change management plan to add changes
- Having change Request Log
 - to track whether it denied or approved

2. Handling **risks**

- Having risk management plan for
 - Predictable risks
 - Unpredictable risks
- Having risk log

3. Controlling **quality**

- If quality isn't at the level you require, determine how to improve it
- If results are of the required quality, review your processes to see if you can achieve that quality more easily

Closing process

1. **Obtain the acceptance** from customers
 - Checking deliverables
 - Design acceptance test
 - Test environments
 - Run test cases
 - Sign off meeting with customers
2. Documenting **lessons learned** for future projects
 - Asking team members even before finishing the project
 - Ask for tips or techniques that helped them in the work
 - Allowing anonymity
3. **Close out report** or final status report
 - What, how, how well, was the project successful ?
 - Financial measures
 - Document delivery dates and milestones
4. **Close contracts**
5. **Archive** project information work

Fin!