

# Welcome to Project Management

## *Understanding the Basics*

By

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# Project Management is everywhere



**Leica**  
Geosystems

**STRABAG**

  
Sony Ericsson

  
**Microsoft**

**Pfizer**

  
**BOEING**

**SAP**

**NOKIA**  
CONNECTING PEOPLE

  
**OMV**

  
**hp**  
invent

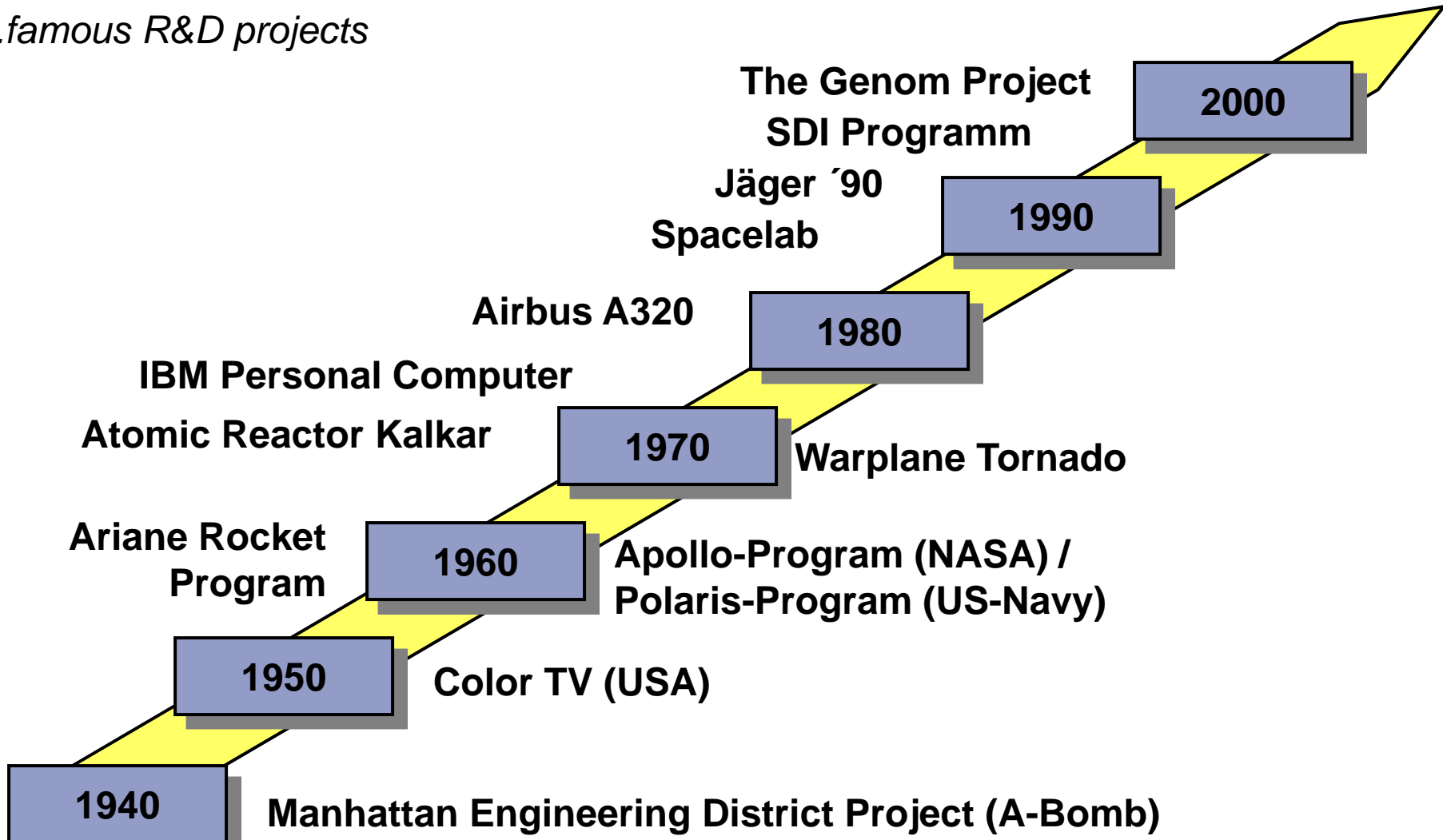
  
**Vorarlberg**  
unser Land

  
**EADS**

**SIEMENS**

# PM history

*...famous R&D projects*



- What is a Project?
- What is Project Management?
- How is Project Management Different from Other Management Principles?
- How did Project Management Develop?
- Why Project Management?
- Benefits of Project Management?
- Who is the Project Manager?

# What is a Project?

A project can be considered to be any sequence 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 human and nonhuman resources (i.e. money, people, equipment)
- Be multifunctional (ie, cut across several functional lines)

# Most Common Projects

- Construction projects
- Conceptual projects / Strategy formulation projects
- IT projects
- Re-organization projects
- R&D projects
- New product development projects
- Feasibility studies
- Large events
- ...



**This is the Burj Al Arab, the only 7 stars hotel  
in the world, it was built in only 18 months...  
And opened its doors in 2003.....**



# What is Project Management?

Project management brings together and optimizes the resources necessary to successfully complete the project.

- The application of knowledge, skills, tools and techniques to project activities to meet project requirements.
- Techniques based on the accepted principals of management used for planning, estimating, and controlling work activities to reach a desired end result on time, within budget, and according to specification.
- Accomplished through the application and integration of five project management process groups
  - Initiating
  - Planning
  - Executing
  - Monitoring and control
  - Closing

# Project Management vs. Operations Management Principles.

## Project Management

- focuses on a project with a finite life span
- projects frequently need resources on a part-time basis

## Operations Management

- Ongoing and repetitive
- Expect to exist indefinitely
- Permanent organizations try to utilize resources full-time

## A Process

- is a series of steps which a particular function is routinely performed

## A Program

- is a group of projects managed in a coordinated way to obtain the benefits and control not available from managing them individually.

# Why Project Management?

- Organizations of all types and sizes are now challenged by one of the most difficult business environments the U.S. has experienced in perhaps decades.
- Now more than ever companies must work smarter and more effectively, if they are to succeed.
- Now more than ever companies are recognizing the impact of Project Management on the bottom line.
- Now more than ever Project Management isn't just for Project Managers.
- Project Management is applicable for:
  - Any unique, one-time, one-of-a-kind, first time, change-to-existing-operations undertaking.

# Benefits of Project Management

- Reduces project failures
- Reduces resistance to change
- Provides structured and proven project approach
- Improves project definition and planning
- Better project tools & techniques
- Better control of scope changes

# Who is The Project Manager?

The person responsible for accomplishing the project objectives.

- Managing a project includes
  - Identifying requirements
  - Establishing clear & achievable objectives
  - Balancing the competing demands for quality, scope, time and cost
  - Adapting the specifications, plans, and approach to different concerns & expectations of stakeholders.

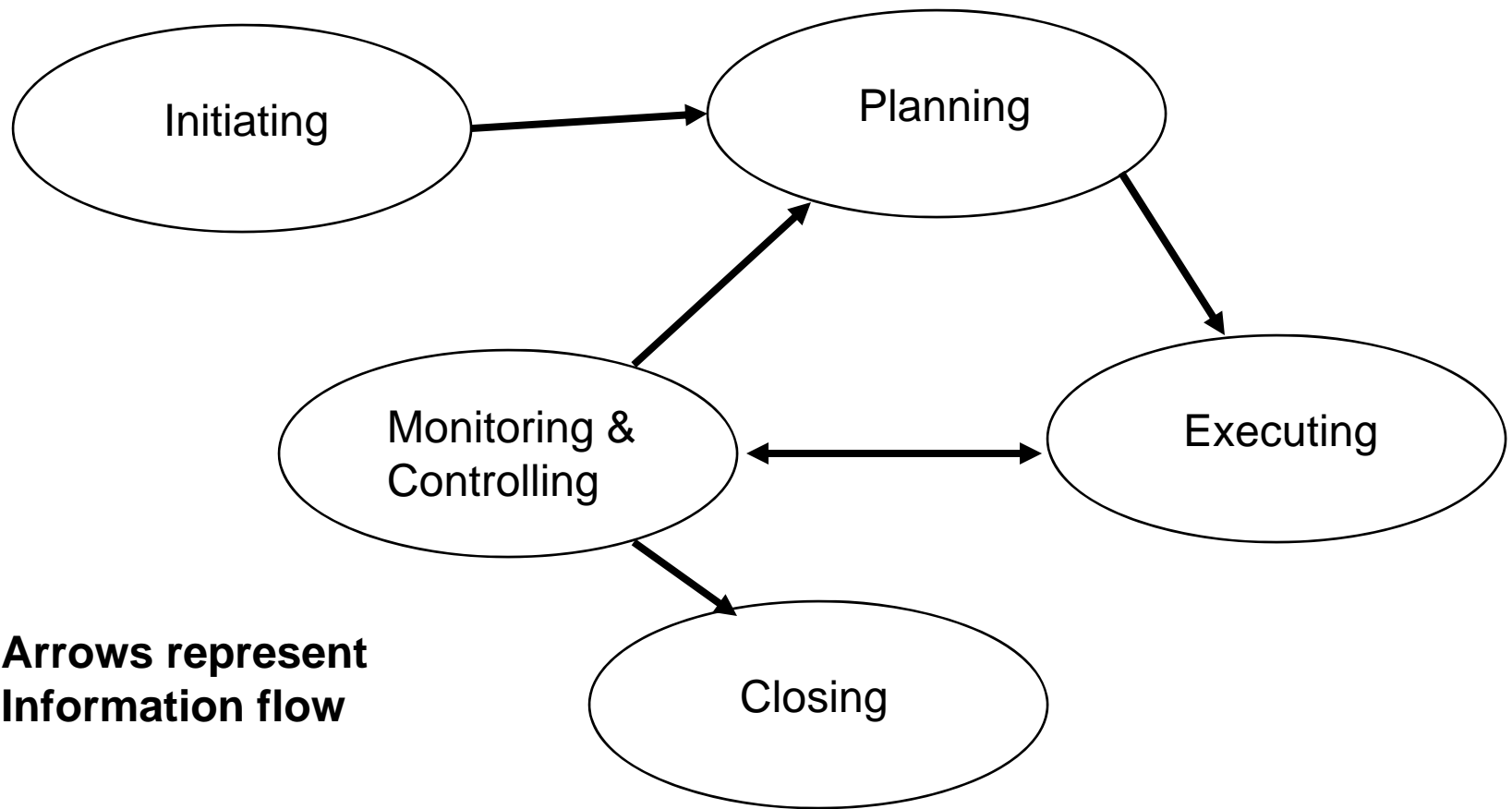
# Project Phases & Life Cycle

- Projects are usually divided into ***project phases*** to improve project control
- Collectively, the project phases are known as the ***project life cycle***
- Each project phase is marked by completion of one or more ***deliverables***

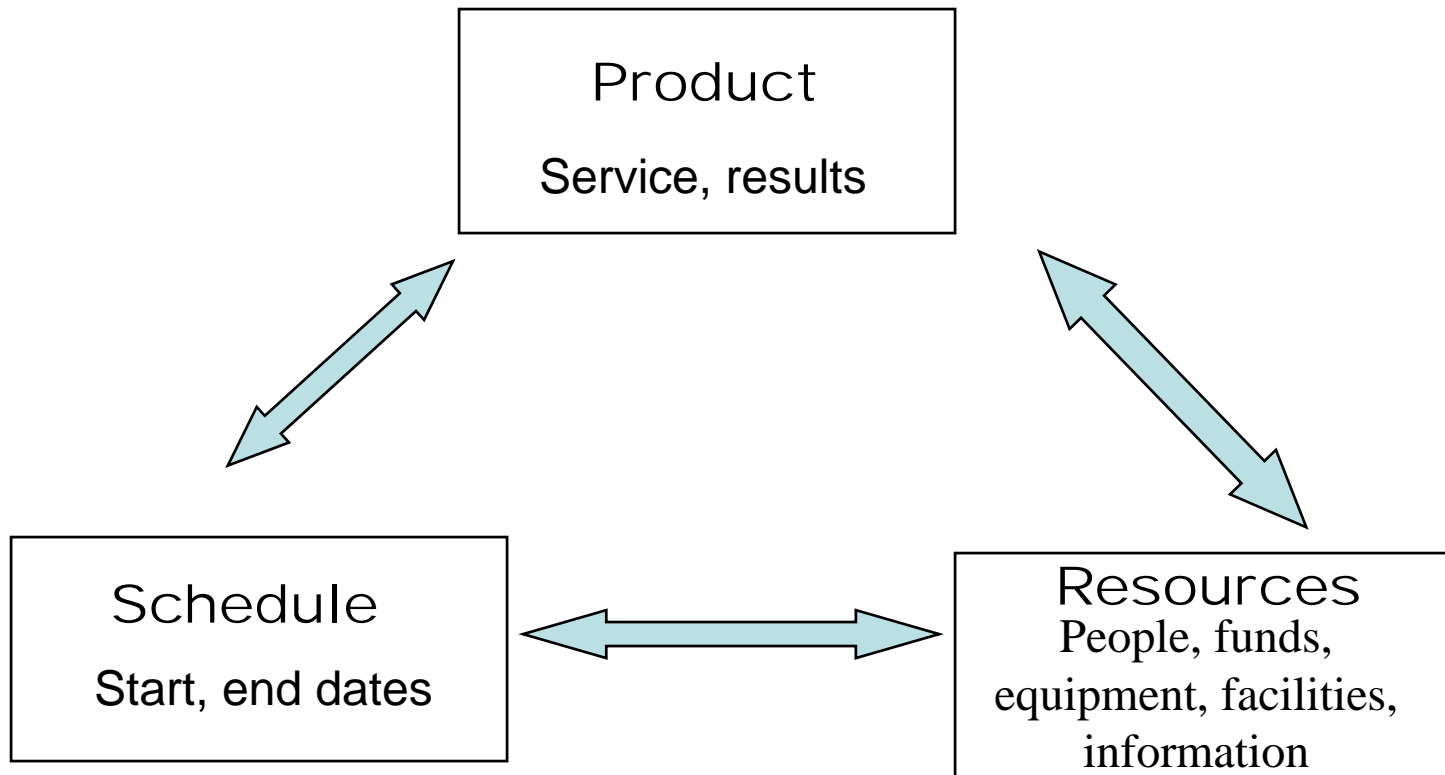
# Process Groups

- **Initiating Process Group.** Defines and authorizes the project or project phase.
- **Planning Process Group.** Defines and refines objectives, and plans the course of action required to attain the objectives and scope that the project was undertaken to address.
- **Executing Process Group.** Integrates people and other resources to carry out the project management plan for the project.
- **Controlling Process Group.** Regularly measures and monitors progress to identify variances from the project management plan so that corrective action can be taken when necessary to meet project objectives.
- **Closing Process Group.** Formalizes acceptance of the product, service or result and brings the project or a project phase to an orderly end.

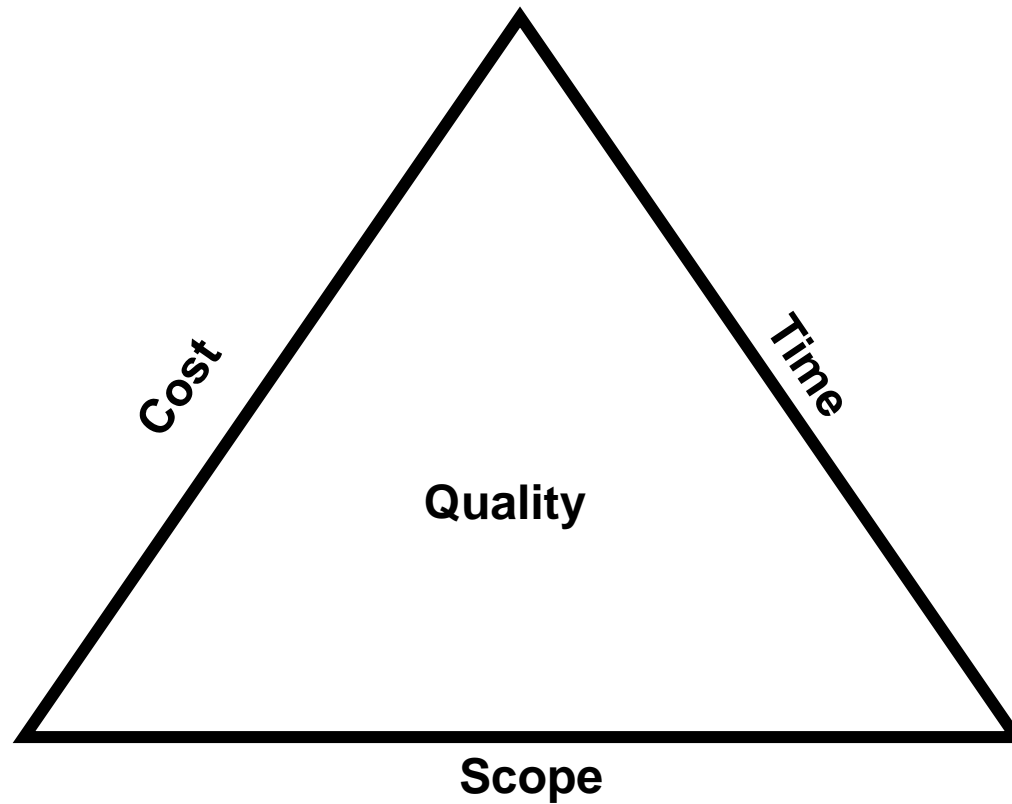
# Process Groups



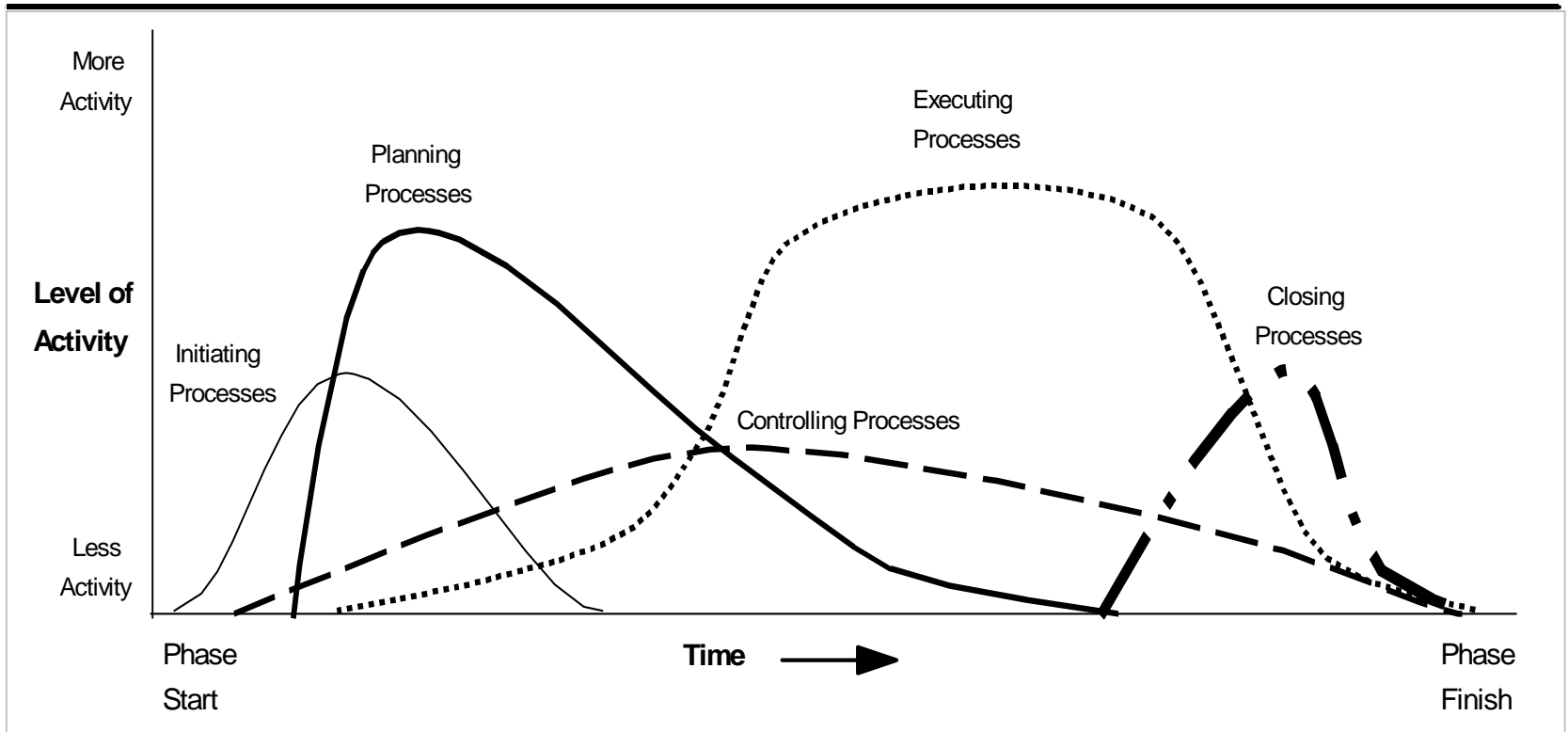
# Does Project Size Matter?



# Triple Constraint



# Overlap of Process Groups Within a Phase



# Initiating

# Who Initiates Projects & Why are they done?

- Stakeholders (sponsor) are typically responsible for initiating a project
- Depends on who authorized the project
- Typical reasons why projects are initiated:
  - Market demand
  - Organizational need
  - Customer request
  - Technological advance
  - Legal requirement

# Getting Under Way / Initiating the Project

- Select a Project from a list of possible projects
- Select a Project Manager
- Determine the authority of Project Manager
- Collect processes, procedures, & historical information.
- Divide large projects into phases
- Identify **ALL** stakeholders
- Turn stakeholder wants, needs, & expectations into requirements
- Document business needs
- Document assumptions and constraints
- Ensure the product scope is as final as possible
- Determine company culture & existing systems
- Determine project objectives & product objectives
- Facilitate resolution to conflicting objectives
- **Develop project charter**
- **Develop preliminary project scope statement**

# Stakeholders

Project stakeholders are individuals or organizations that are actively involved in the project, or whose interest may be positively or negatively affected as a result of project execution or completion

## Key Stakeholders

- Project manager
- Customer
- Performing Organization
- Project Team Members
- Project Sponsor

# Project Charter

- Is a document that gives the project existence
- Identifies the project manager and authority
- States the business purpose of the project
- Defines priorities in both business and technical terms
- Gives assumptions and constraints
- Summarizes the scope of the project

# Preliminary Scope Statement

- Includes product scope description
- Used to provides an initial description of the scope of the project

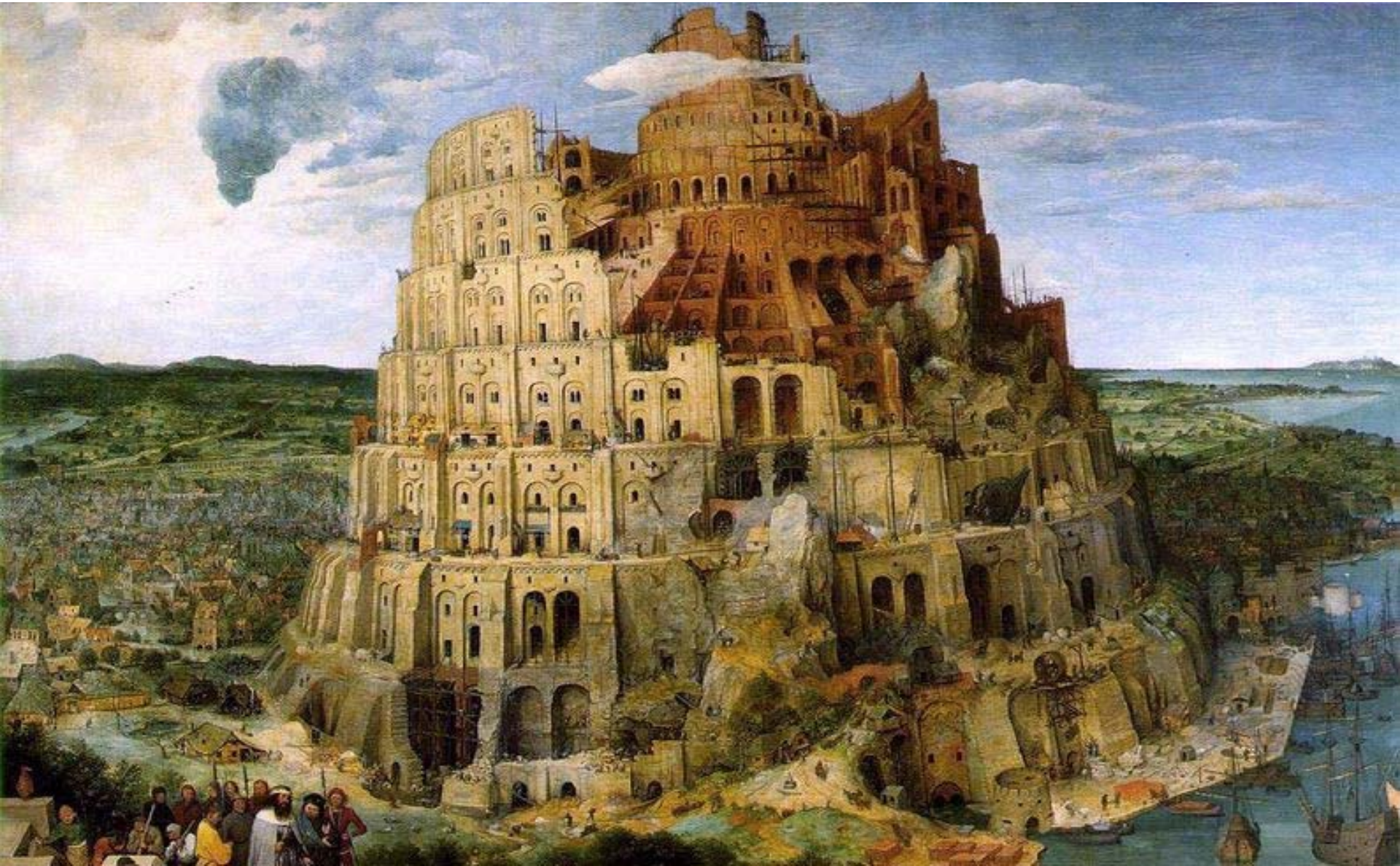
# Planning

# Why Project Planning

Primary Purpose of Project Planning is to establish a set of directions in sufficient detail to tell the project team exactly

- What must be done
- When it must be done
- What resources to use in order to produce the deliverables of the project successfully

# Without Project Planning, The Result

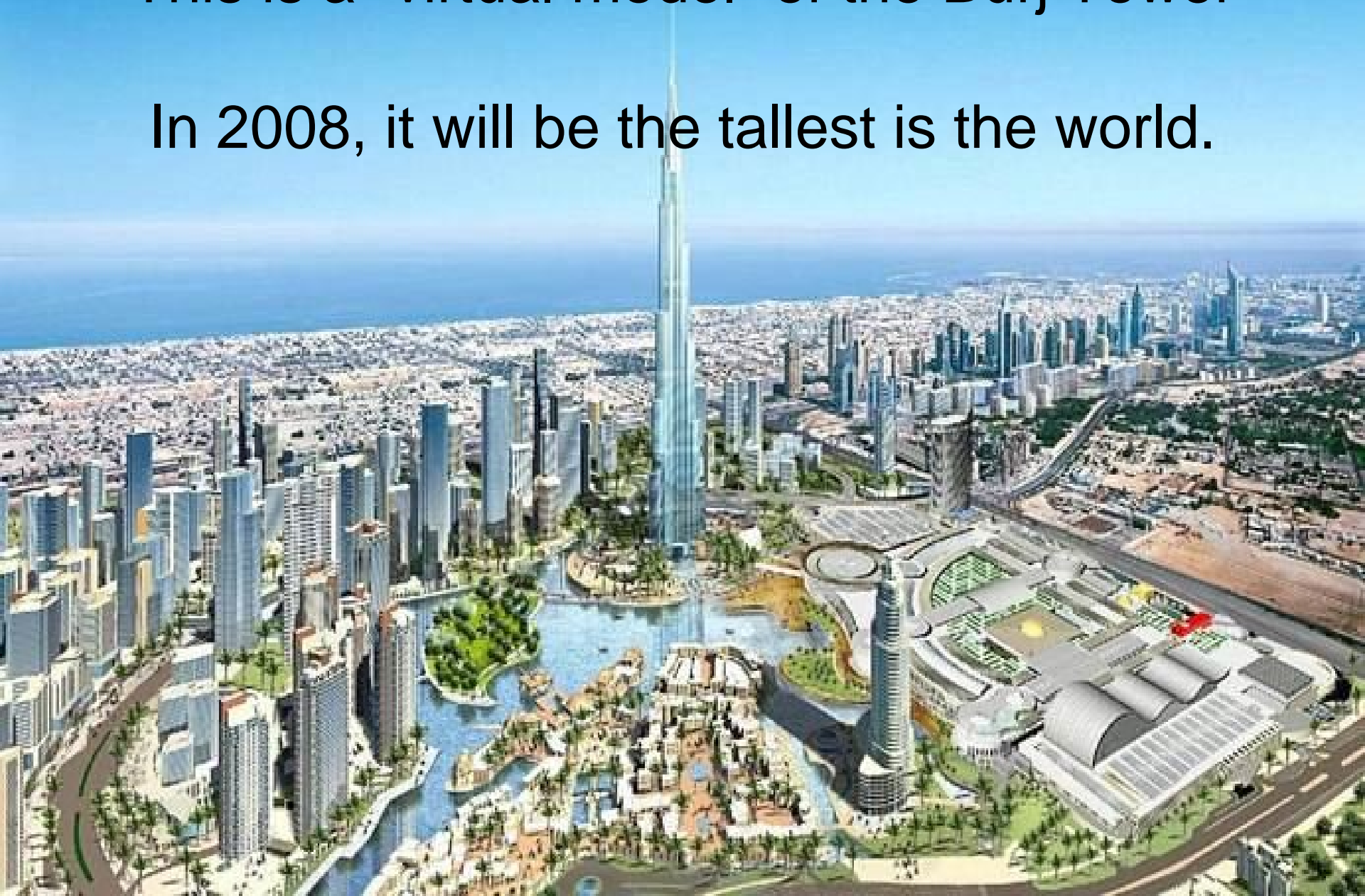


**With Project Planning, You may see a the city  
with the biggest growing rate in the world...**



This is a “virtual model” of the Burj Tower

In 2008, it will be the tallest in the world.



# Project Planning Process Group II

- Determine how you will do planning
- Create project scope statement
- Select project team
- **Create work breakdown structure (WBS)**
- Create activity list
- Create network diagram
- Establish resource requirements
- Establish time & cost

# Project Planning

## Process Group II Continued

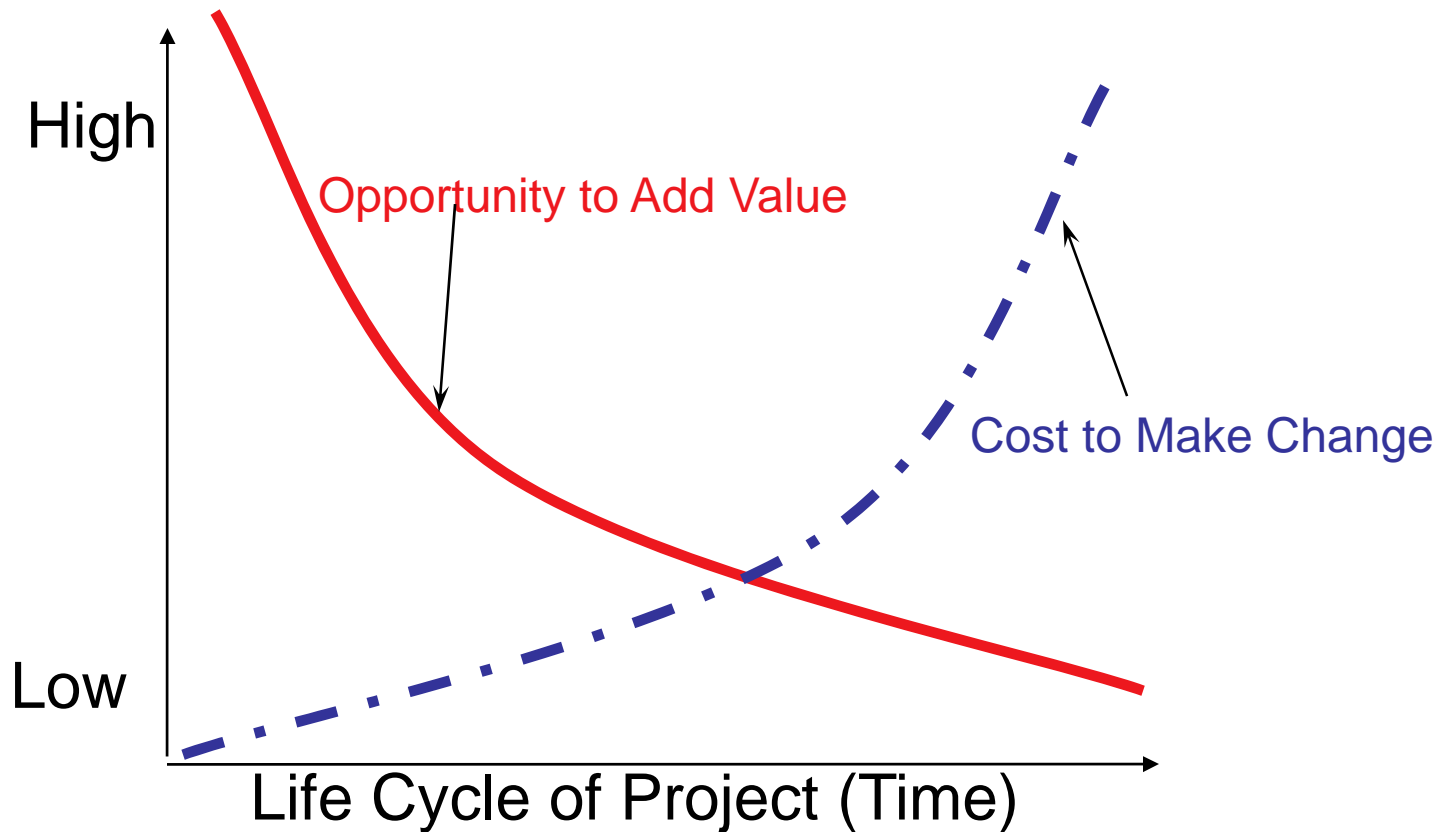
- Determine critical path
- Develop a schedule
- Develop a budget
- Determine quality standards, processes and metrics
- Determine roles and responsibilities
- Determine communications requirements
- Identify (qualitative & quantitative) risk analysis & response planning

# Project Planning

## Process Group II Continued

- Determine what to purchase
- Prepare procurement documents
- Finalize the “How to execute and control” aspects of all management plans
- Create process improvement plan
- **Develop final Project Management Plan**
- Gain formal approval
- **Hold kickoff meeting**

# Characteristics of a Life Cycle (1)



# Work Breakdown Structure

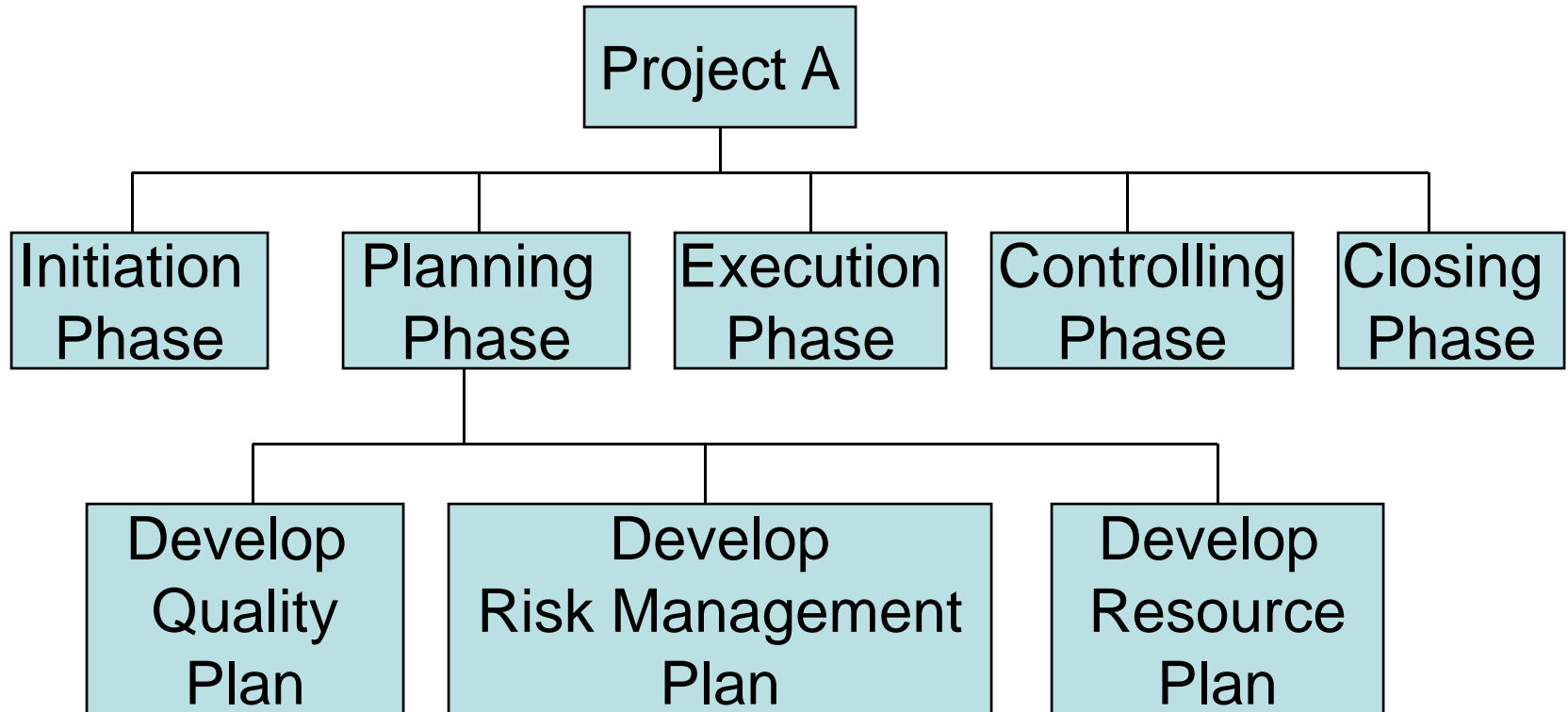
The Work Breakdown Structure (WBS) is used to break a complex project into more manageable components to facilitate future project phases:

- Planning
- Executing
- Controlling
- Closing

# Work Breakdown Structure

- Typically constructed with 2 or 3 levels of detail, or more for very complex projects.
- Start by identifying logical subdivisions of the project, then break each of these down further.
- Continue decomposition until you reach **the work package level** at which:
  - Cannot logically be subdivided further
  - Can be complete quickly
  - Have a meaningful conclusion and deliverable
  - The Project Manager feels appropriate to manage

# Work Breakdown Structure Example



# WBS Rules of Thumb

- Work packages follow 8/80 rule
  - Not less than 8 hours
  - Not more than 80 hours
- Not longer than one, or at most two, reporting periods in duration
  - Avoids the “task is almost done” syndrome
  - Task is only 0%, 50%, or 100% done.
  - No other completion % allowed

# Planning Time Dimension

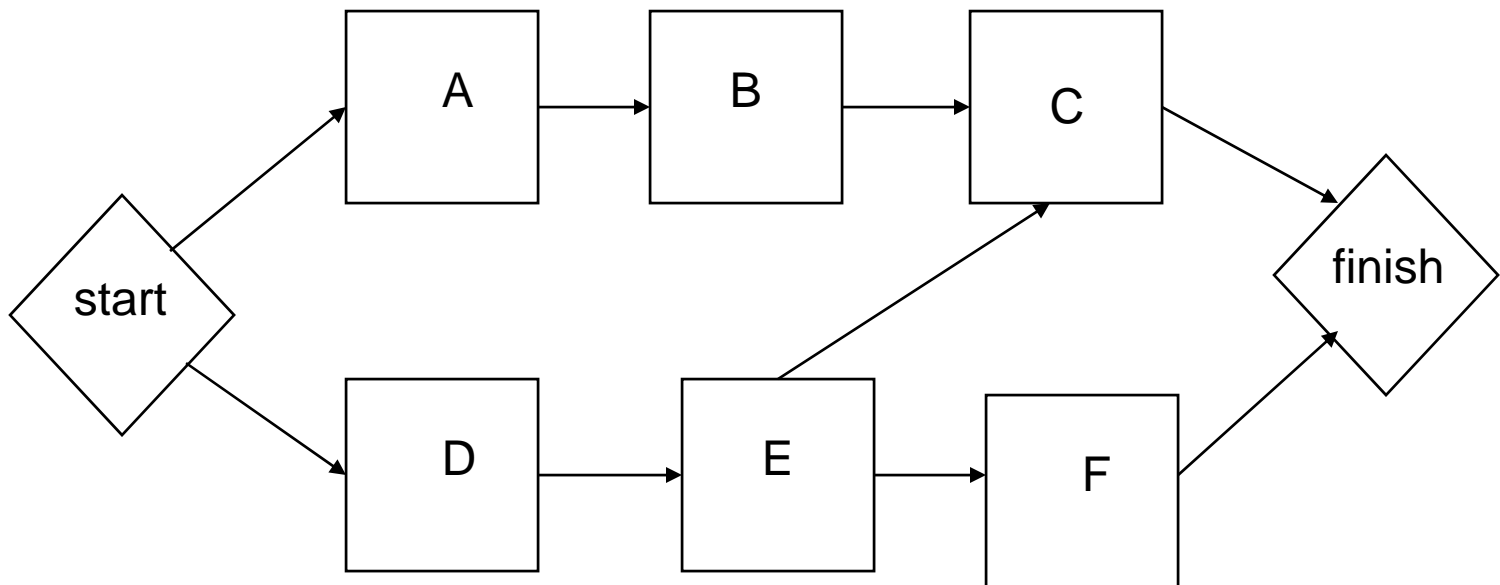
The objective is to determine the shortest time necessary to complete the project.

With WBS determine the time required to complete each subunit.

Next determine the sequence of the subunits completion, which ones may be under way at the same time. From this determine the 3 most significant time elements:

- The duration of each step
- The earliest time at which a step may be started
- The latest time at which a step must be started

# Network Diagram

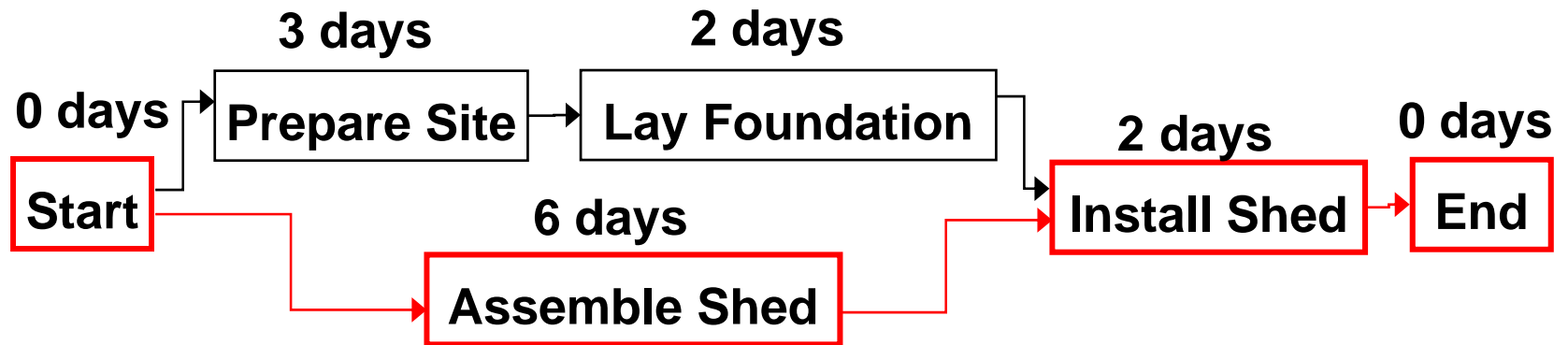


# NETWORK ANALYSIS

- Shows the interdependence of tasks
- Estimates the project duration
- Determine the critical path
- Determine slack in the paths

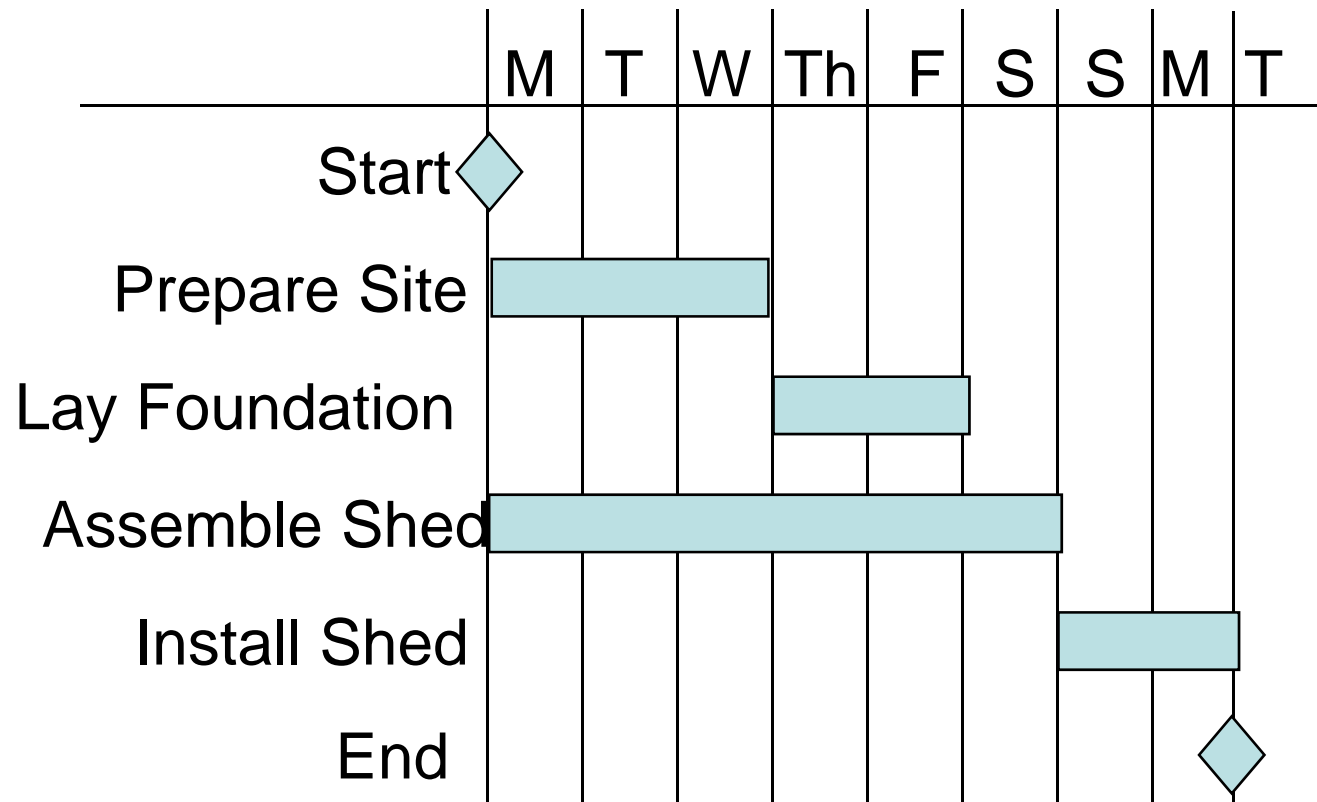
# Critical Path

- Path with longest duration
  - Determines project length



- Float = delay allowed w/o project delay

# Gantt Chart



# Project Kickoff Meeting

- Held at the end of the planning process group before beginning work on the project
- Attended by all parties to the project
  - Customers      Sellers      Project team
  - Senior and Functional Management
  - Sponsor
- Held to make sure everyone is familiar with the details of the project & the people that will be working on the project
- Agenda will include a review of project risks, communication plan, and schedule.

# EXECUTING

# Project Execution Process Group III

- Acquire final team
- Execute PM Plan
- Complete Product Scope
- Recommend changes & corrective actions
- Send & receive information
- Implement approved changes, defect repair, preventive & corrective actions.
- Continuous improvement
- Follow processes
- Team building
- Give recognition & awards
- Hold progress meetings
- **Use work authorization system**
- Request seller responses
- Select seller

# Work Authorization System

- Clarify & initiate the work of each work package
- Use formal procedure to authorize work to begin in the correct sequence and at the right time
- Defined by organization
- Work is authorized using form that describes task, responsible party, anticipated start & end dates, special instructions, and whatever else is particular to the project.
- Work is assigned and authorized by Project Mgr. or the Functional Mgr.

# Monitoring & Controlling

# Project Monitoring & Control

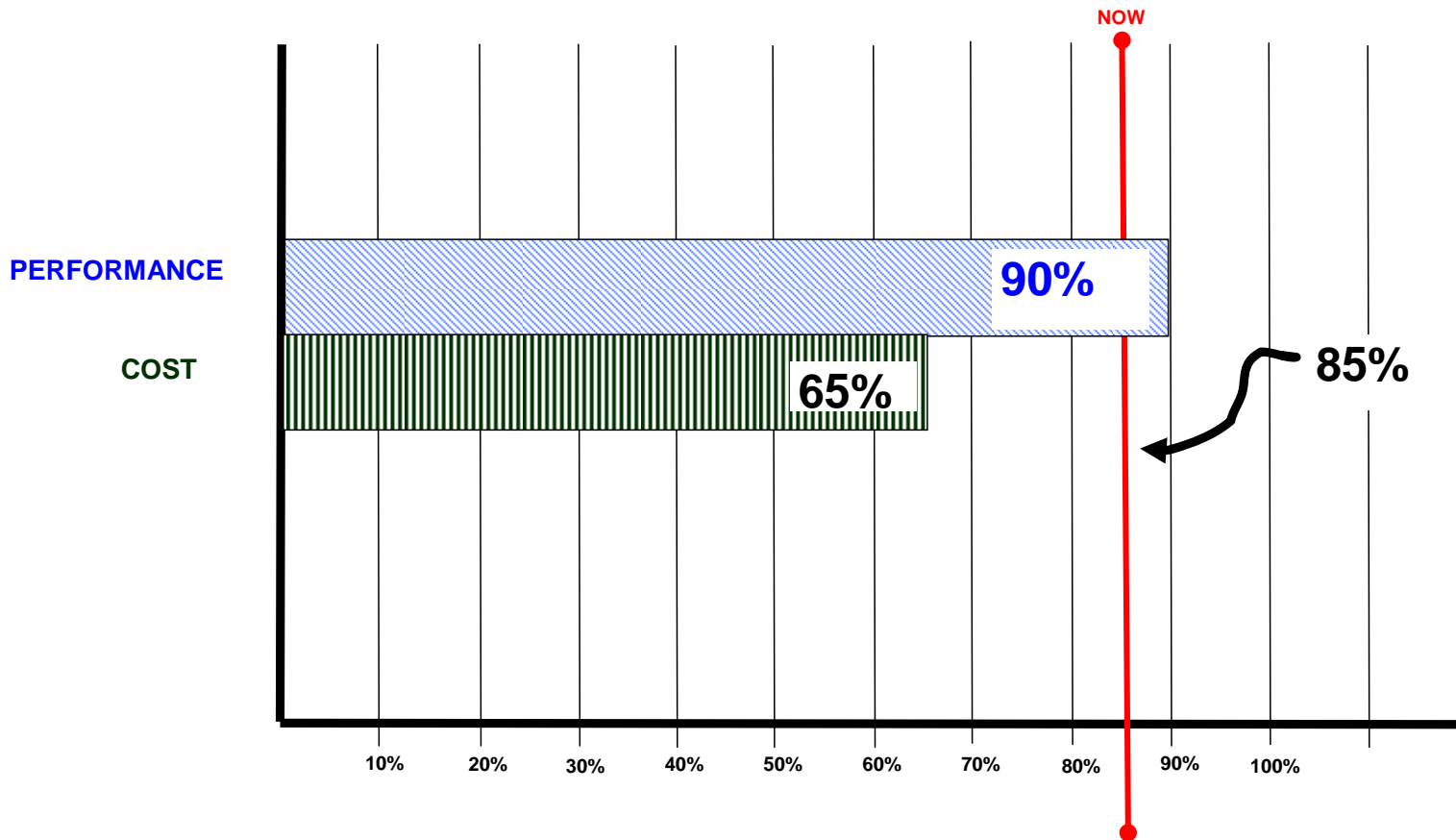
## Process Group IV

- Measure against the performance measurement baseline
- Measure according to the management plans
- Determine variances & if they warrant corrective action or a change
- Scope verification
- Configuration management
- Recommend changes, defect repair, preventive & corrective actions

# Project Monitoring & Control Process Group IV Continued...

- Perform integrated change control
- Approve change, defect repair, preventive & corrective actions
- Risk audits
- Manage reserve
- Use issue logs
- Facilitate conflict resolution
- Measure team member performance
- Report on performance
- Create forecasts
- Administer contracts

# Performance Reporting



# Closing

# Project Closure

## Process Group V

- Develop closure procedures
- Complete contract closure
- Confirm work is done to requirements
- Gain formal acceptance of the product
- Final performance reporting
- Index and archive records
- Update lessons learned knowledge base
- Hand off completed product
- Release resources

# SUMMARY

- Projects are temporary undertakings that have a definite beginning and end, distinguishing them from ongoing work of an organization.
- There are five phases in any successful project: initiate, plan, execute, monitor & control, and close.
- It is imperative to the success of a project that it be clearly defined before it is undertaken, including the criteria for determining successful completion of the project.
- Changes are expected, but these changes should be documented along with any resulting impact on the schedule and budget.

# Summary Continued...

- A temporary team is usually assembled to carry out the work of the project. Roles and responsibilities, and training.
- Frequently, policies and procedures are required to clarify how the team is to function during the project.
- Work must be coordinated & flow smoothly
- Progress of the project must be monitored and any deviations that occur measured, and corrective actions taken.
- The project manager is expected to provide feedback to team members, negotiate for materials, supplies, and services and help resolve differences.

# Questions?