

Project Management Framework

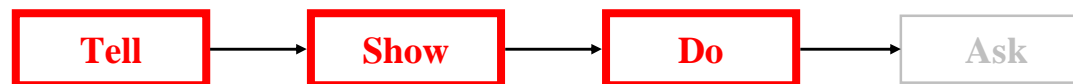
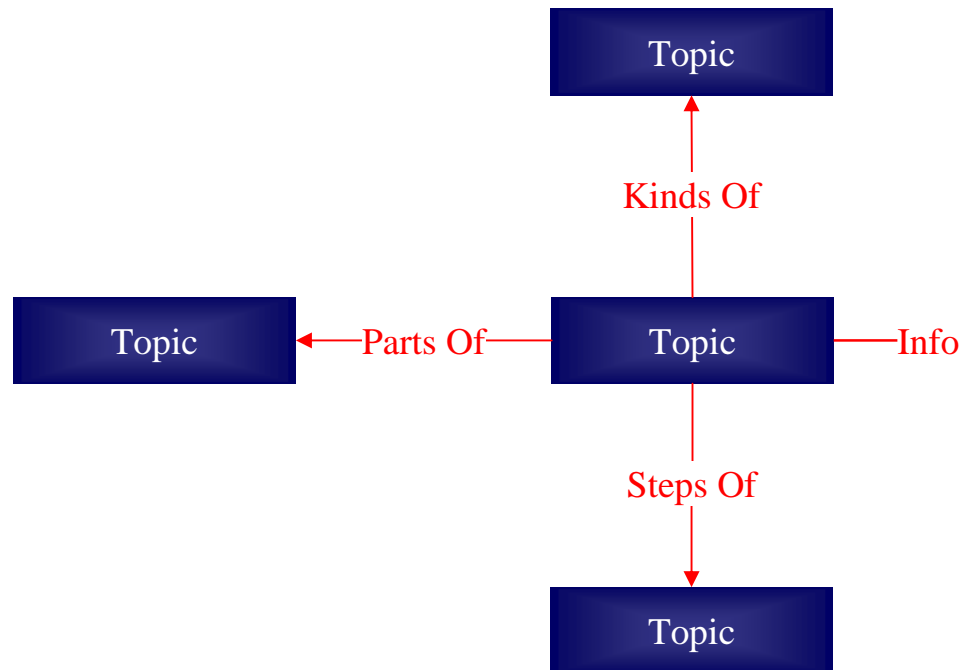
Laying the foundation



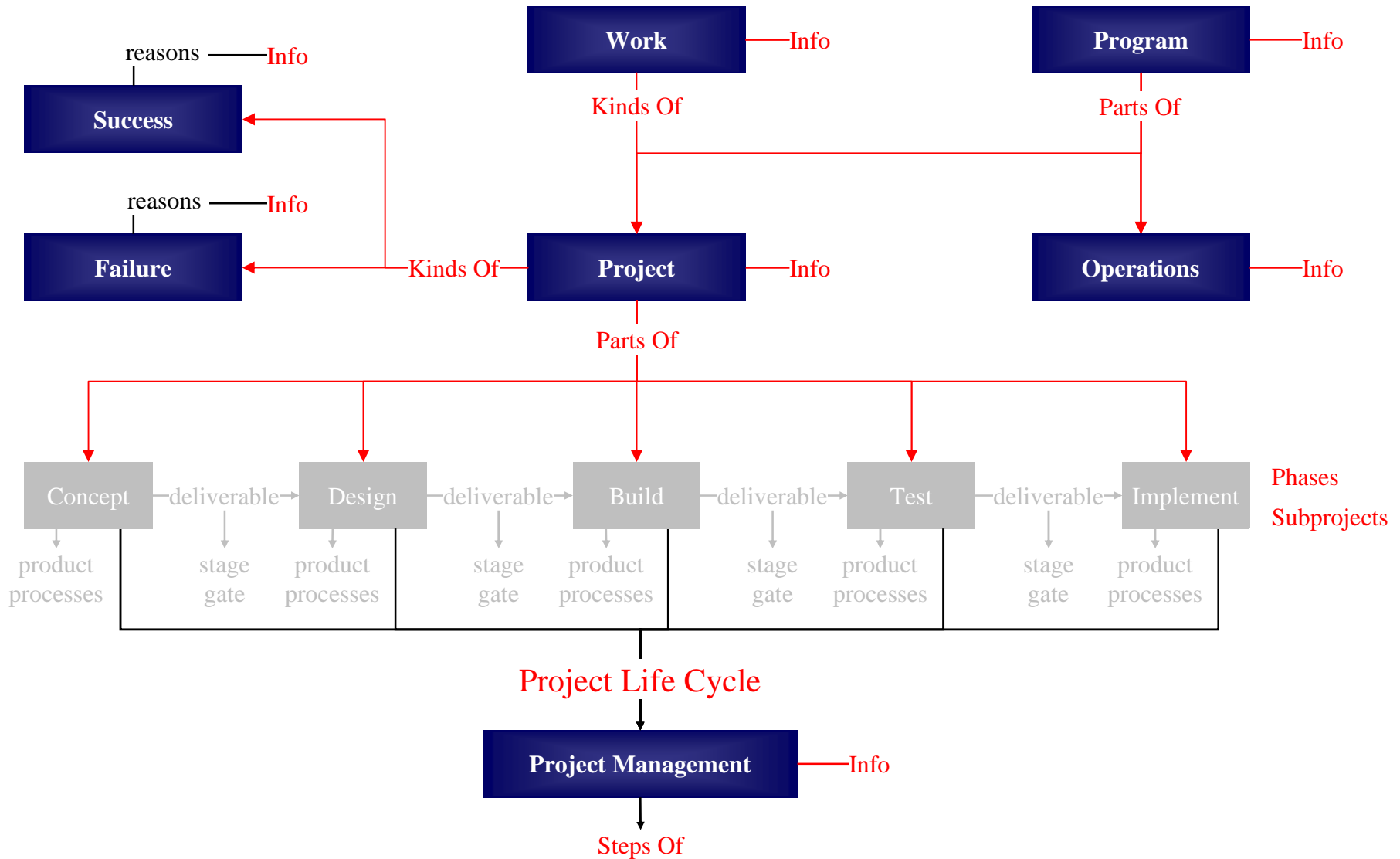
The student will be able to:

- Communicate using standard, common project management terms
- Participate more effectively in projects
- Manage small projects
 - Define and manage scope
 - Manage risk and issues
 - Determine schedule and cost baseline

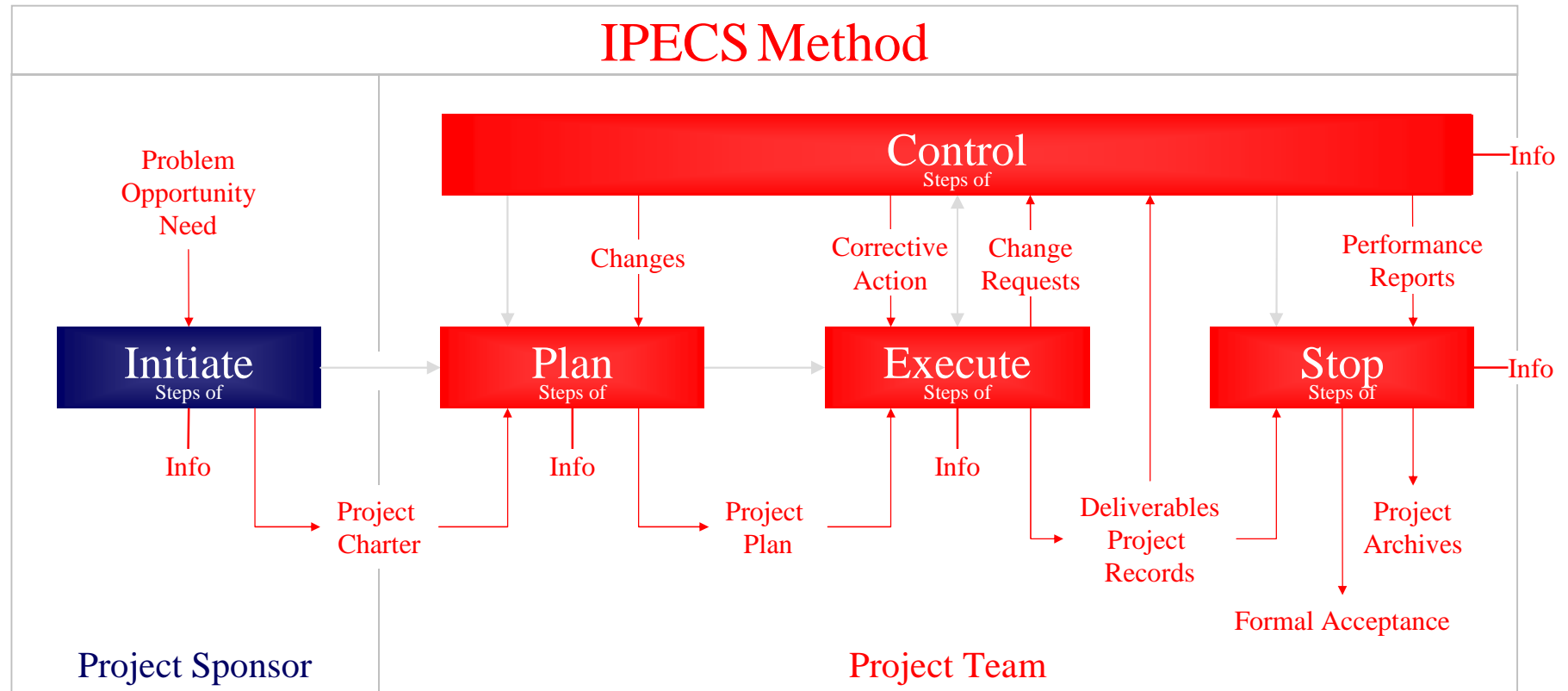
Learning Strategy



Course Map



Project Management





What is Work?

- 1, put forth effort; labor; toil; strive.*
- 2, act; operate, esp. effectively.*

Webster's Dictionary



Types of Work

There are fundamentally two types
of work:

Project Work

Operations Work



What Is a Project?

*“A temporary endeavor
undertaken to create a
unique
product or service.”*

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Project Characteristics

How long is a project?

Finite - a beginning and an end

What does a project create?

A unique product or service

How is a project staffed?

Personnel are assigned temporarily



Examples of a project

- Developing new software program
- Building a new house
- Designing a car
- Writing a book

Characteristics

- Finite
- Unique Product or service
- Temporary staff



What Is Operations?

*“The ongoing execution
of repetitive tasks
to support the performance of a
previously defined
product or service.”*

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Operations characteristics

How long is operations?

Repetitive, ongoing

What does operations create?

The same product or service

How is operations staffed?

Assigned permanently.



Examples of operations

- Assembling cars in a factory
- Delivering the newspaper
- Computer operator
- Making bread in a bakery

Characteristics

- Ongoing
- Same result
- Permanent staff



More Examples

Some examples of a project?

The Academy Awards Show

Installing a LAN

Some examples of a operations?

Playing golf

Delivering the mail



Activity: List some examples

- Project
 - Finite
 - Unique Product or service
 - Temporary staff
- Operations
 - Ongoing
 - Same result
 - Permanent staff

Some examples of a project?

Some examples of a operations?



Activity: Classify the following

Cooking dinner

Designing a car

Building a rocket

Cleaning house

- Project
 - Finite
 - Unique Product or service
 - Temporary staff
- Operations
 - Ongoing
 - Same result
 - Permanent staff



What Is a Program?

*“A group of projects
managed in a coordinated way
to obtain benefits
not available
from managing them individually.”*

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Programs may also include operations.



Program Characteristics

How many pieces of work?

More than 1

Reasons for a Program?

Benefits beyond individual projects.

What type of work?

Project and maybe Operations.



Benefits of a Program

- Decomposes large endeavors into more **manageable** projects
- **Coordination** of overall objectives and related tasks
- Facilitates a more **effective** planning environment
- **Reuse** of key common resources
- Allows **sharing** of processes, policies and lessons learned
- Maximizes **quality** and minimizes **risk**



Example 1 of Program

A software developer will be developing new releases (project) and at the same time supporting the existing product (operations).

Characteristics

- More than 1 piece of work
- Benefits beyond individual projects
- Contains projects and operations



Example 2 of Program

An automobile company designs new models each year (project) but also supports the assembly of the existing models (operations).

Characteristics

- More than 1 piece of work
- Benefits beyond individual projects
- Contains projects and operations



Exercise: List some examples

Characteristics

- More than 1 piece of work
- Benefits beyond individual projects
- Contains projects and operations

Some examples of a program?



Parts of Program

Programs are comprised of:

Projects (usually more than 1)

and

Operations (sometimes)



Project – Kinds Of

- In project management there are basically two kinds of projects:

Successful Projects

Failure Projects

- What determines whether a project is successful or not?



Definition of Success

A project is deemed to have been successful if it has been completed

on time
on budget
within scope





Real Success

A more complete indication of project success would also include whether the project

was accepted by the customer



and

was able to use the customer as reference





Top 5 reasons for success

(Standish Group 2000)

1. Executive support
2. User involvement
3. Experienced project manager
4. Clear business objectives
5. Minimized scope





Executive Support

Executives must provide **adequate support** to projects. This means providing **resources, funds, and their own time**. Executives may be required to sit on steering committees to help resolve project issues.





User Involvement

It is crucial to have users involved during **all stages** of the project life cycle. Users are required to provide specifications for the product or service that is being developed. Users should also be required to **sign-off** on major deliverables.





Experienced Project Manager

The more experienced the Project Manager, the **fewer errors** and rework that will occur.

Experienced Project Managers will be able to apply their previous knowledge and apply any lessons learned.





Clear Business Objectives

Users must make every effort to ensure that their business objectives are **stated clearly** and that the team understands these requirements. Not having done so, could result in a product the user does not want. The business objectives should **not** be left up to the project team.





Minimized Scope

Time is the enemy of all projects, and since **scope** affects time, or project duration, they are linked. Clearly then, minimizing scope increases a project's chances of success. Setting **realistic** scope, increases the likelihood of success.





Top 5 reasons for failure

(Standish Group 1998)

1. Incomplete requirements
2. Lack of user involvement
3. Lack of resources
4. Unrealistic expectations
5. Lack of executive support





Incomplete Requirements

If requirements and specifications are **incomplete**, change will be required. While it is almost impossible to avoid change, every effort should be made to ensure **ALL** requirements have been gathered. Changes can cause costs and schedule to **increase**.





Lack of User Involvement

If users do not provide the **adequate** amount of input, they may end up receiving a product or service they did **not** want. This input is particularly important at the requirements gathering stage.





Lack of Resources

It is important to ensure that the **right people**, with the **right skills**, have been assigned to the project. Not only will this increase the likelihood of success, it could mean a more timely execution of the project plan.





Unrealistic Expectations





Lack of Executive Support

Lack of executive support would mean that the project does not have the necessary **priority** within the organization.

This could affect the amount of **resources**, **funds** and **executive time** allocated to the project.





Parts of a Project

Projects can be divided into
smaller more manageable components
called
sub-projects.

A type of a sub-project
is a
Phase.



Characteristics of a sub-project

- The main objective of a sub-project is usually the completion of an **interim** deliverable.
- These sub-project deliverables can represent **milestones** of the overall project.
- The main difference between a project and a sub-project is that a project creates a “Product” or “Service”. Sub-projects creates **pieces** of the overall “Product” or “Service”.

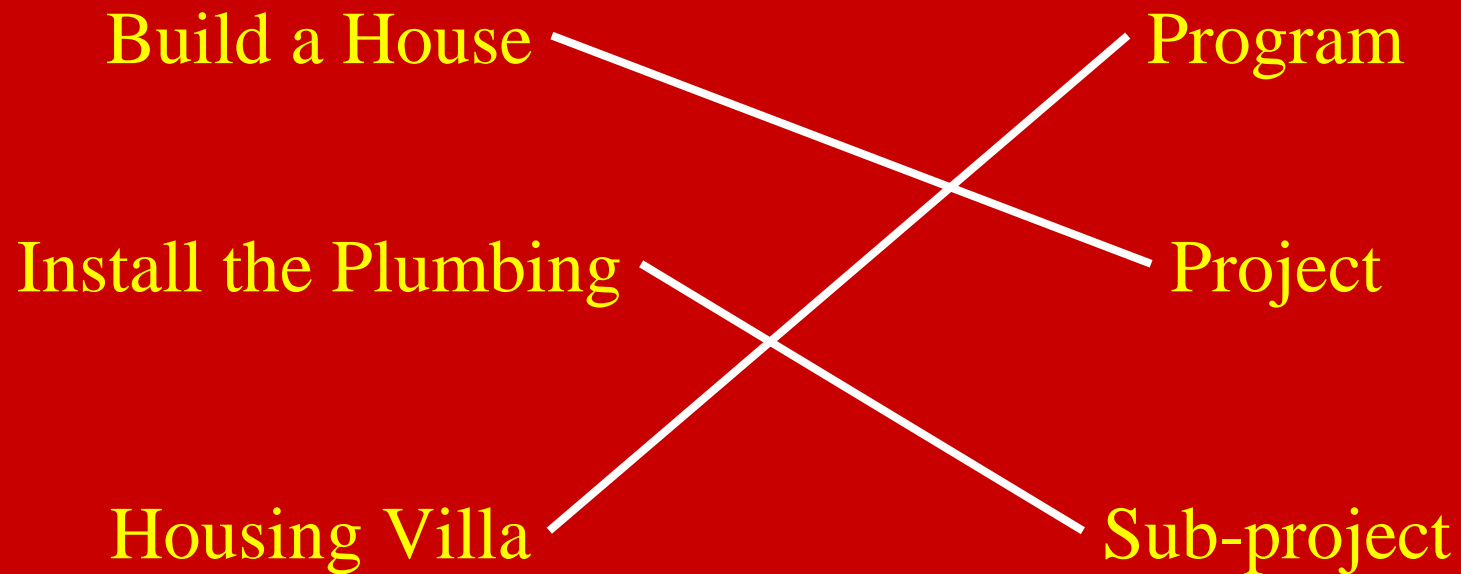


Examples of Sub-projects

- the design **phase** of a Project
- the plumbing of a construction project
- the development of a specific system module
- the architect's plans



Activity: Match the following





Phase

*“A collection
of
logically related project activities,
usually culminating in the completion of a
major deliverable.”*

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One or more Phases make up the
Project Life Cycle

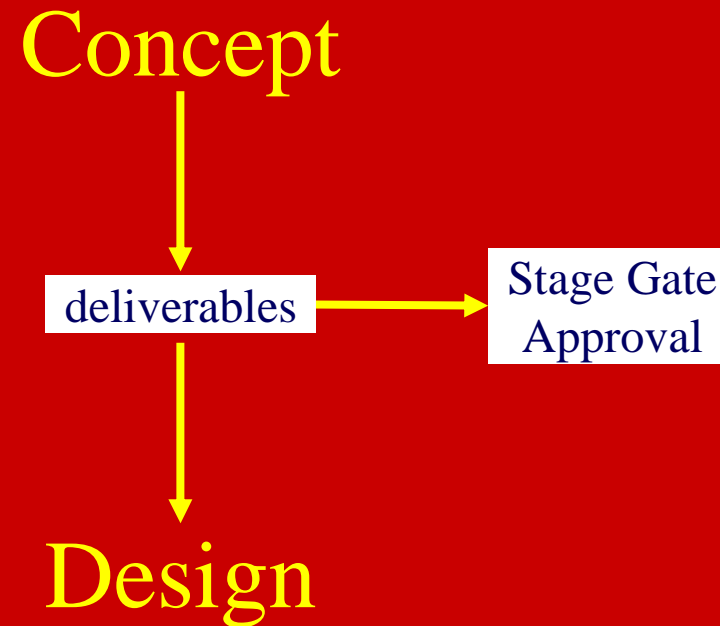


Characteristics of a Phase

- each phase is marked by the completion of one or more major **deliverable**
- part of a **sequential logic** designed to ensure proper definition of the product or service
- phase-end **reviews** of all deliverables
- deliverables are generally **approved** before work starts on the next phase
- A phase is a sub-project. Not all sub-projects are phases.



Examples of a Phase





Project Life Cycle

*“A collection of
generally sequential project phases
whose name and number are determine by
the control needs of the organization or
organizations involved in the project”*

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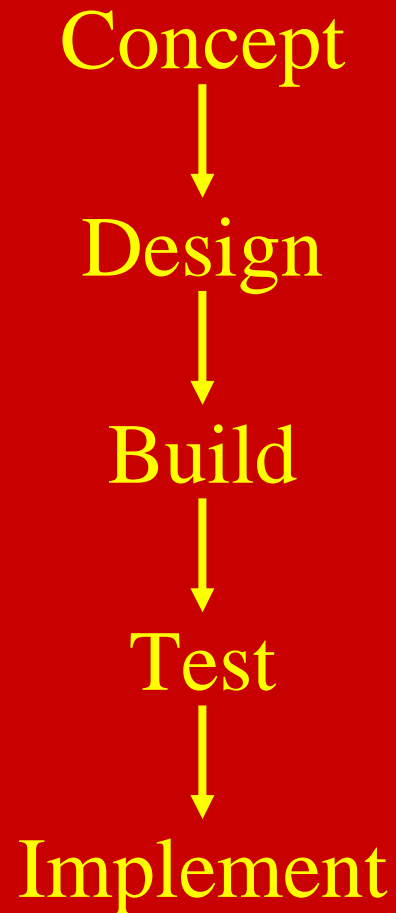


Life Cycle Characteristics

- **costs** are lower in earlier phases, higher towards the end and drop of rapidly at conclusion
- probability of a project's **successful** completion is lowest at earlier phases and gets higher as project progresses
- the ability for stakeholders to make **changes** is higher at earlier phases and lower as project continues



Examples of a Life Cycle

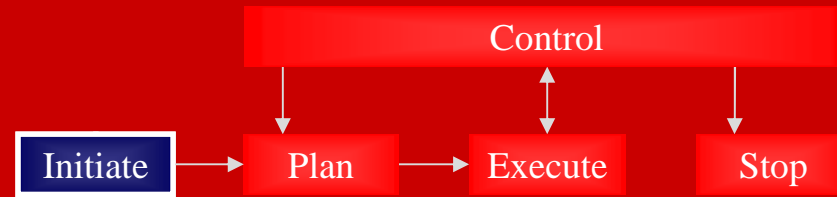




Project Management

*“The application of
knowledge, skills, tools and techniques
to project activities
in order to meet or exceed
stakeholder needs and expectations
from a project”*

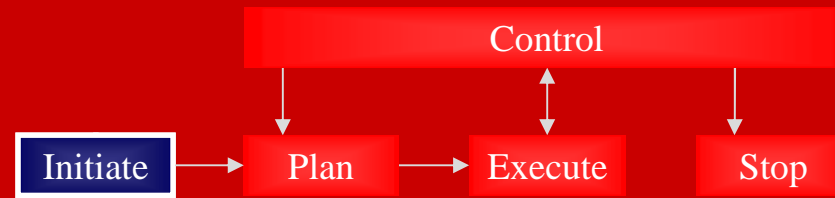
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Initiate

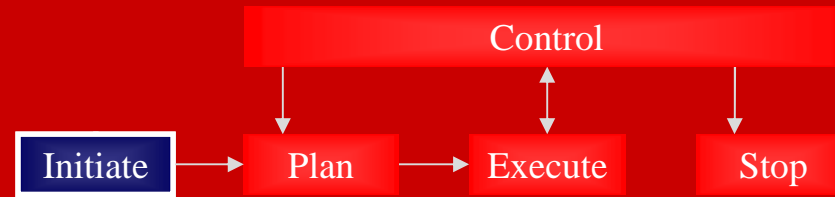
*“Recognizing
that a project or phase should
begin
and
committing to do so”*

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Initiate – Steps Of

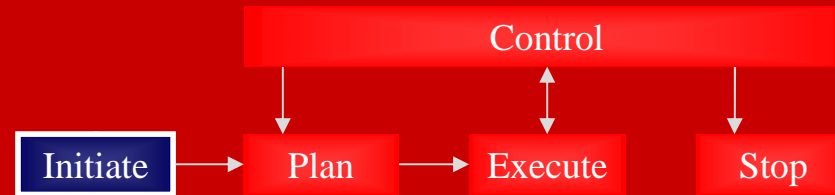
1. Choose a Project
2. Create the Project Charter
3. Assign Project Manager
4. Identify Stakeholders
5. Hold Kick-Off Meeting



Initiate – Step 1

1. Choose a Project

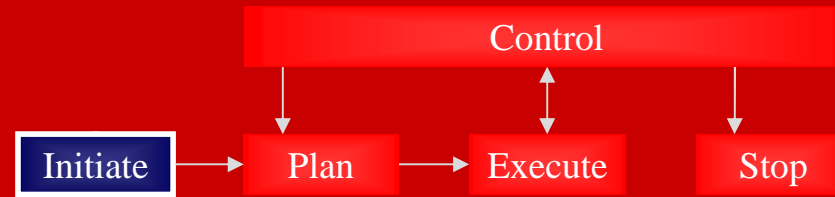
- Projects are initiated to satisfy a **business requirement**, solve a **problem**, or respond to an **opportunity**.
- A project is selected based on various **criteria**. This criteria is determined by the organization then prioritized, assessed, and scored.
- Selection **criteria** could include business objectives, cost, return on investment, and/or feasibility



Initiate – Step 2

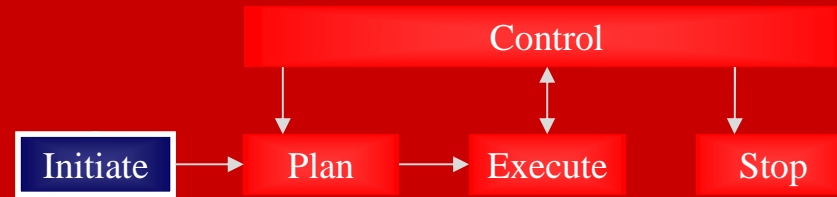
2. Create the Project Charter

- **Contract** between the project team and the project sponsor.
- Created by **senior management**. Project Manager should create one if one does not exist.
- Provides the project manager with the **authority** to utilize the organization's resources
- Describes the organization's **business need**.
- Should include a **description** of the end product or service that the project delivers.
- Parts Of →



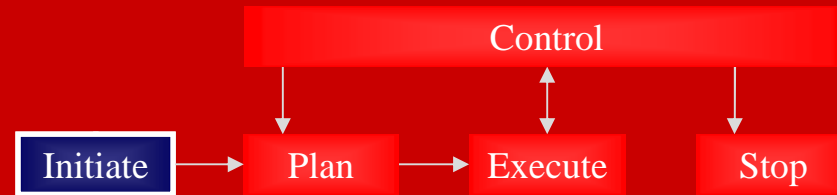
Project Charter – Parts Of

- Business Need
 - Describe the **reason** for doing the project, the Organization's **Goals**.
- Product Description
 - **Describe** the Product or Service that the project will create.
- Constraints
 - What constraints or limitations are there?
- Assumptions
 - List any assumptions that were made



Activity: Create a Project Charter

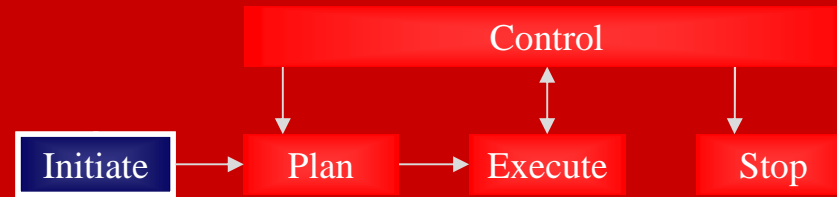
- Project: *A Company Christmas Party.*
- Use the Template in Project Method
- Work in teams
- Time limit: ½ hour.



Initiate – Step 3

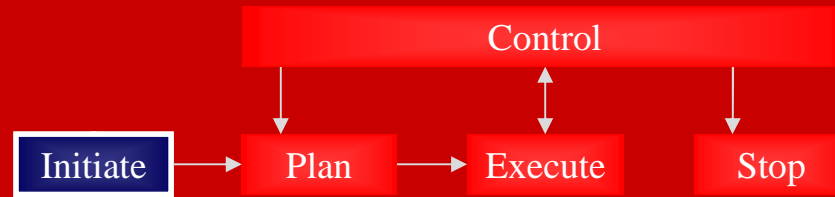
3. Assign a Project Manager

- The project manager is **selected** by senior management or sponsor of the project
- Should be in place **before** the project begins.
- Must have a clear job description and understanding of the **level of authority** he/she has during the project.



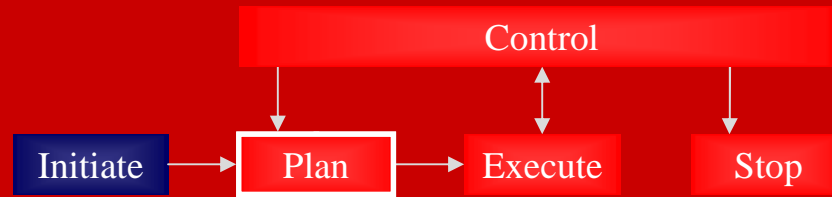
Initiate – Step 4

4. Identify Stakeholders
 1. Stakeholders are individuals or groups who will be **impacted** by the project.
 2. Common **stakeholders** are the Project Manager, Project Sponsor, Team Members and Customer.
 3. Stakeholders will **participate** in the project by helping to identify the requirements, the scope, perform project activities, resolve issues, identify risk, creating and accepting deliverables.



Initiate – Step 5

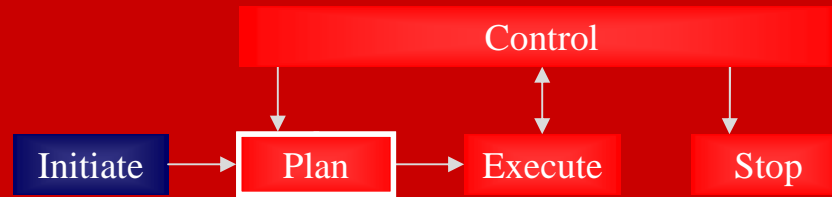
5. Hold Kick-Off Meeting
 1. The Project Manager will hold a meeting to formally **launch** the project.
 2. All **currently identified** stakeholders should be present.
 3. The **Project Charter** should be shared with the stakeholders.
 4. Identify next steps and **participation** required from each for the planning activities (scope, activities, estimates, risk, etc.)



Plan

*“Devising and maintaining
a workable scheme
to accomplish
the business need
that the project was undertaken to
address.”*

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Plan – Steps Of

1. Plan Scope
2. Plan Time (schedule)
3. Plan Cost (budget)
4. Plan Risk
5. Plan Quality
6. Plan Human Resources
7. Plan Communication
8. Plan Procurement
9. Plan Integration

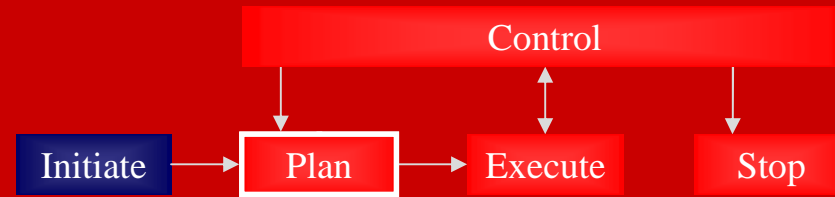


Changes



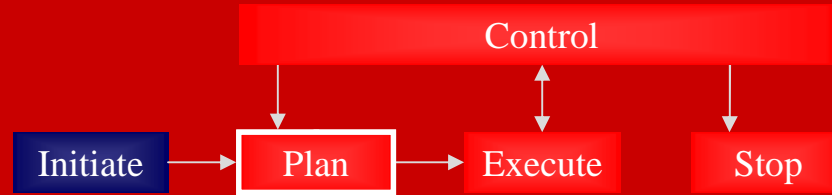
Project Charter

Project Plan



1. Plan Scope – Steps Of

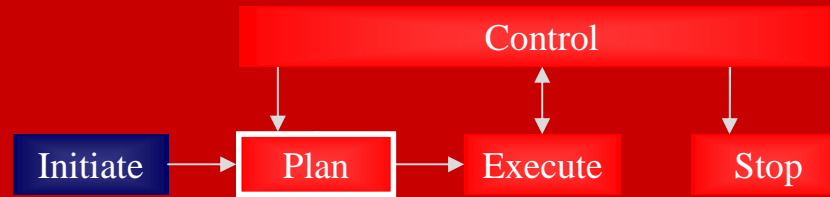
1. Create a Scope Statement
2. Create a Work Breakdown Structure
3. Create a Scope Management Plan



1. Plan Scope – Step 1

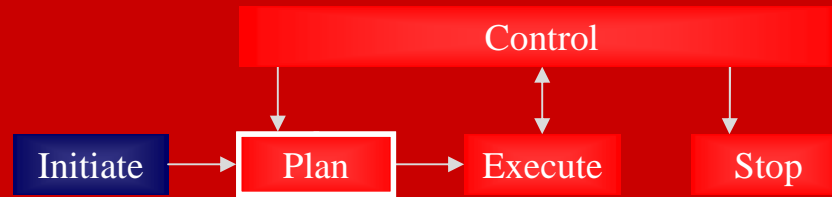
1. Create a Scope Statement

- A Scope statement is a formal document used to state **what is** and **what is NOT** to be included in the project. It provides the **foundation of understanding** between the Project Team and the Customer.
- Parts Of →



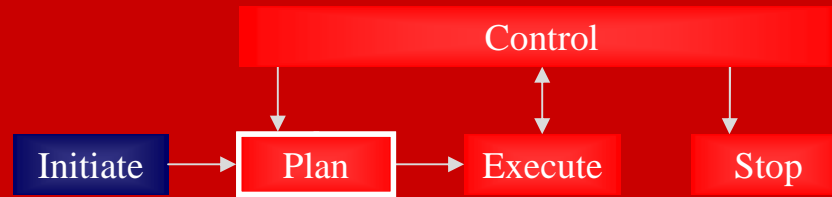
Scope Statement – Parts Of

- Business Need
 - Describe the **reason** for doing the project.
Organization's Goals.
- Product Description
 - **Describe** the Product or Service?
- Deliverables
 - What will be **delivered**? What is **excluded**?
- Objectives
 - What will the project's product **accomplish**.
- Constraints and Assumptions
 - Any **limitations** and **assumptions**



Activity: Create a Scope Statement

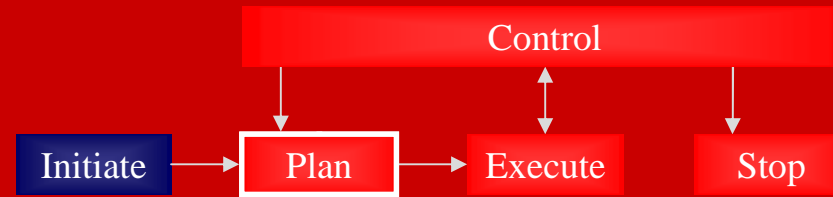
- Project: *A Company Christmas Party.*
- Use the Template in Project Method
- Work in teams
- Time limit: 1/2 hour.



1. Plan Scope – Step 2

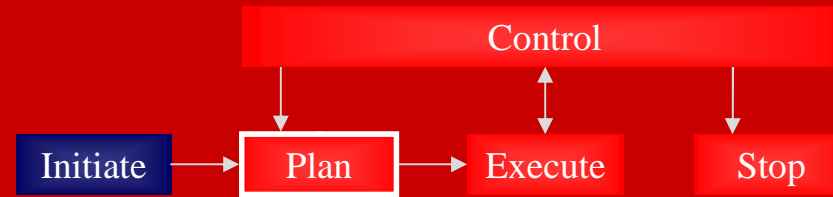
2. Create a Work Breakdown Structure

- A Work Breakdown Structure (WBS) is a **deliverable oriented** representation of the **scope** of the Project.
- Includes *Product* deliverables as well as *Project Deliverables*.
- Each level of the WBS is decomposed until the lowest level (work package) is a deliverable which can be **managed** and **controlled** by the project.
- Parts Of →



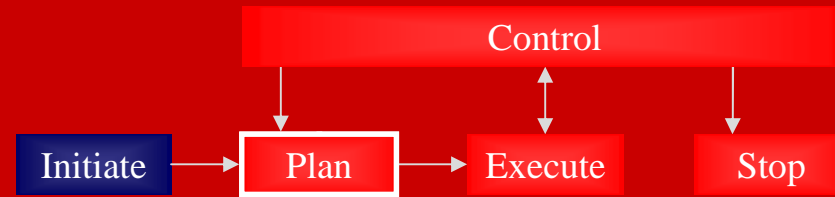
WBS – Parts Of

- Chart
 - A **graphical** representation of the deliverables.
- WBS Dictionary
 - A description of each **element** in the WBS.
- Work Packages
 - The **lowest level** of the WBS. A fairly detailed description of these deliverables. This description must have enough detail to allow it to be **assigned** to someone not currently involved in the project.
- Code of Accounts
 - Collection of WBS element **identifiers**.



Activity: Create a WBS

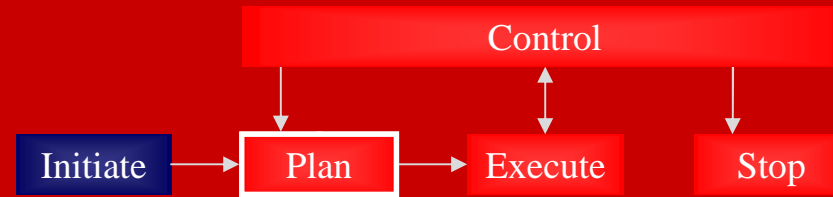
- Project: *A Company Christmas Party.*
- Use the Template in Project Method
- Class participation activity.
- When completing the dictionary and work-package descriptions, only do one of the elements.
- Time limit: ½ hour.



1. Plan Scope – Step 3

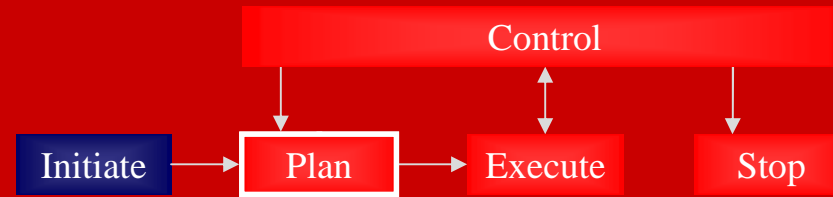
3. Create a Scope Management Plan

- The Scope Management Plan is a document that describes how **changes** to scope will be managed.
- Parts Of →



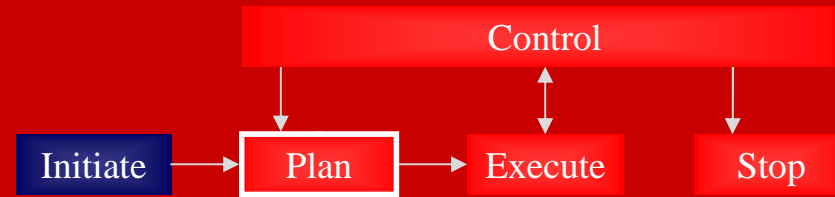
Scope Management Plan – Parts Of

- Approach
 - Describe the overall **approach** to scope management. How will scope be **contained**?
- Stability
 - What is the **likelihood** of change? How **often**?
- Change Control
 - **Who** can submit changes to the project? How will these changes be **managed**? How will the changes be **classified** and **prioritized**?



2. Plan Time – Steps Of

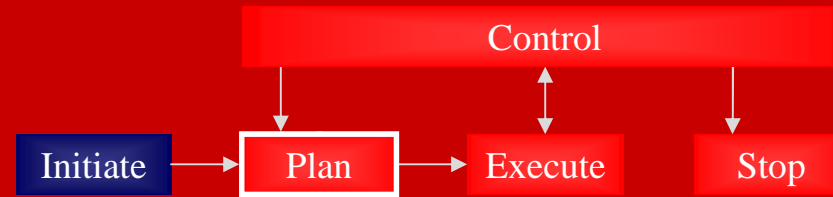
1. Create an Activity List
2. Determine Dependencies
3. Estimate Time
4. Create Schedule



2. Plan Time – Step 1

1. Create an Activity List

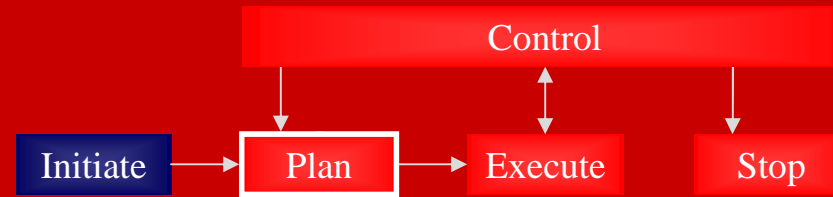
- Define all the **activities** for each deliverable in the WBS.
- Activities should be broken down enough to be **manageable** by the project manager, but not too low level.
- Set **milestones** for major deliverables and **approval** for these deliverables..



2. Plan Time – Step 2

2. Determine Dependencies

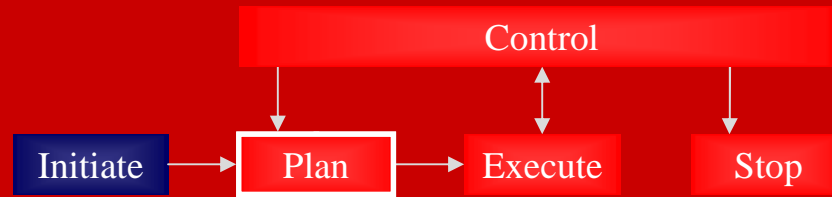
- Determine which activities **must** be completed before others. These include both soft (desired by the team) and hard (must be done) dependencies.
- What are the **prerequisites** for each activity? Most common dependency is start-to-finish, which requires one task to finish before another task can begin.



2. Plan Time – Step 3

3. Estimate Time

- Estimate how much **time** it will take to complete each task. This is the **first** estimate and will be adjusted in future calculations.
- Estimates should be stated in terms of **duration**. (e.g. 2 days, 1 week, 1 month) The Human Resources Plan will determine which resources to staff.
- PERT Info →

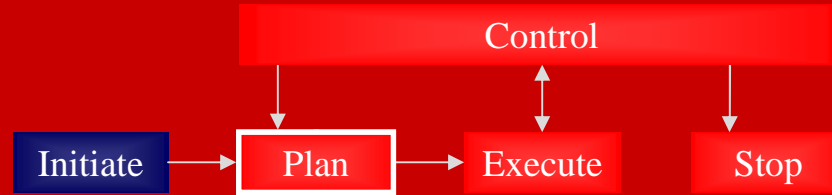


PERT - Info

Performance Evaluation Review Technique

- Determines how much **time** a project needs before it is completed.
- Each activity is assigned a **best**, **worst**, and **most likely** completion time estimates.
- Estimates are used to determine the **average** completion time.
- Used to calculate the critical path for the entire project.

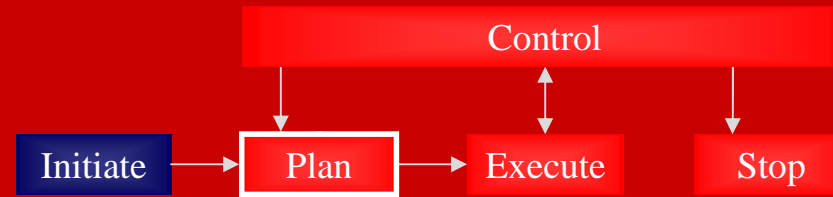
$$\frac{\text{worst} + (4 \times \text{most likely}) + \text{best}}{6}$$



2. Plan Time – Step 4

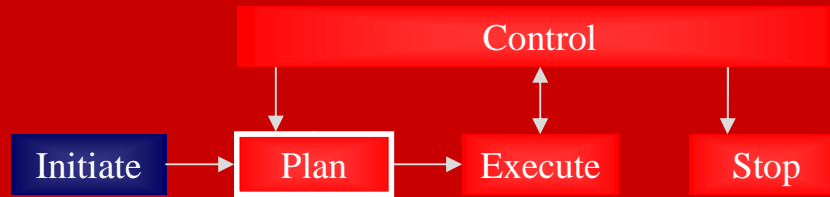
4. Create Schedule

- Scheduling will determine the planned **dates** for the completion of each activity.
- Scheduling should perform resource leveling to ensure resources are not **over allocated**.
- Use of the following techniques should be applied:
 - Critical Path - Info →
 - Fast Tracking – Info →
 - Crashing - Info →



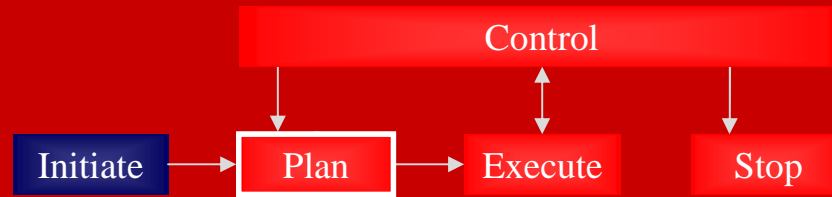
Critical Path - Info

- The critical path of a project is the **execution** path that produces the target completion date.
- Any increase or decrease of a tasks duration, might (most likely) affect the critical path and therefore the completion date of the overall project.

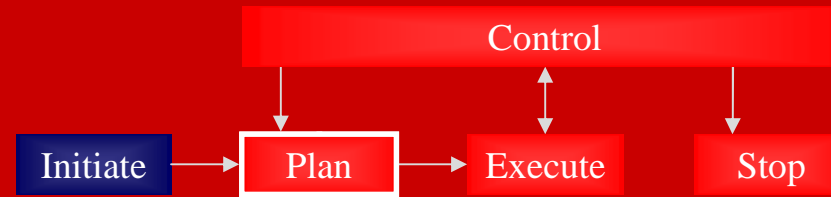


Fast Tracking - Info

- Determining which activities could be eliminated or “minimized”.

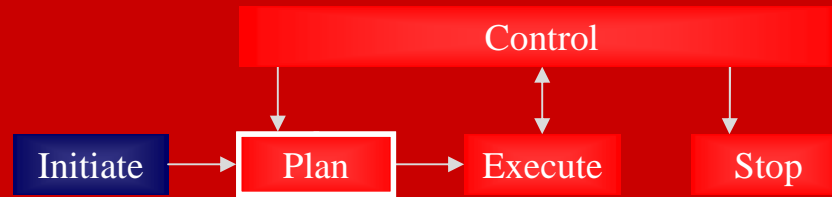


Crashing - Info



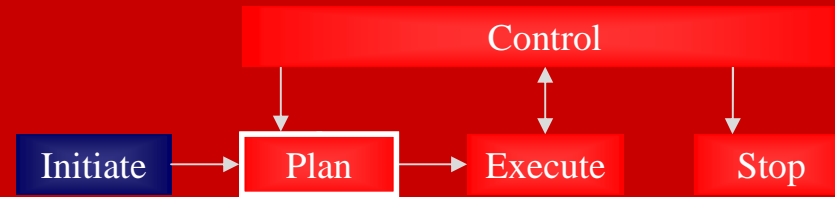
Activity: Create a Schedule

- Project: *A Company Christmas Party.*
- Use the Template in Project Method
- Class participation activity.
- Time limit: ½ hour.



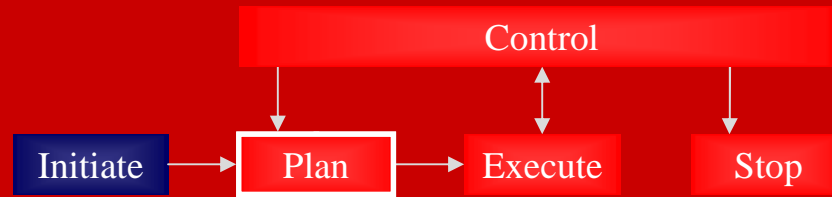
3. Plan Cost – Steps Of

1. Determine Resource Requirement
2. Estimate Costs
3. Adjust Schedule and Scope
4. Create Project Cost Baseline



3. Plan Cost - Step 1

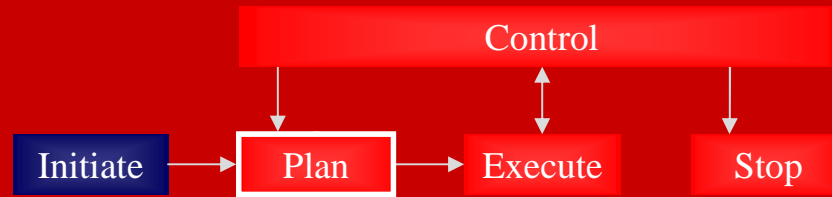
1. Determine Resource Requirement
 - Determine what types of resources would be needed to execute each activity in the activity list. (e.g. Architect, Programmer, etc.)



3. Plan Cost – Step 2

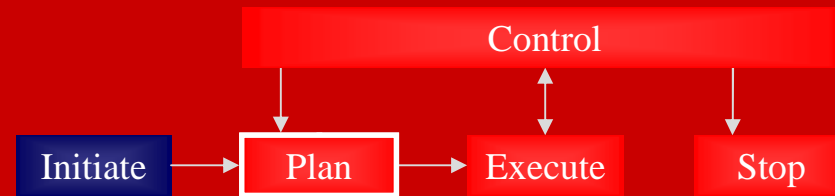
2. Estimate Costs

- Estimate the cost per resource, the cost per activity and the cost per WBS element. These costs can be estimated at the lowest level and then rolled up for total summary cost.



3. Plan Cost – Step 3

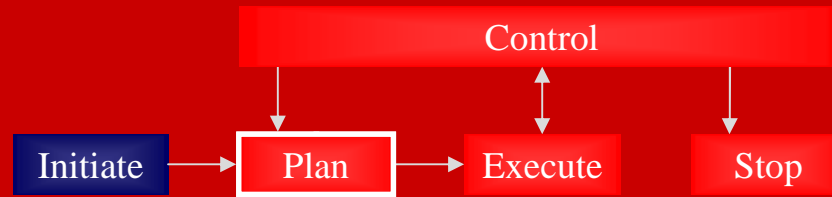
3. Adjust Schedule and Scope
 - Once resources are assigned and costs are estimated it may be necessary to adjust the schedule. Certain resources may not be available until a certain time. Costs may exceed budget and scope may have to be adjusted.



3. Plan Cost – Step 4

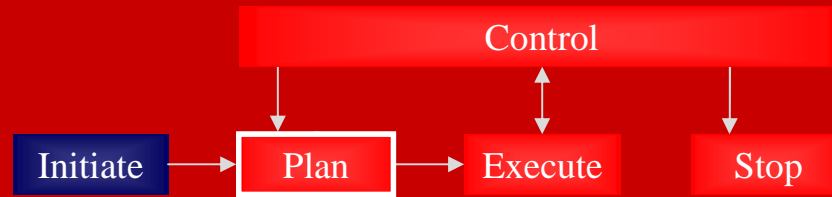
4. Create Project Baseline

- Once all costs have been estimated and schedules and scope have been adjusted, create a Cost Baseline. This baseline will be used to measure the performance of the project. Only changes to scope will change this baseline.
- Parts Of →



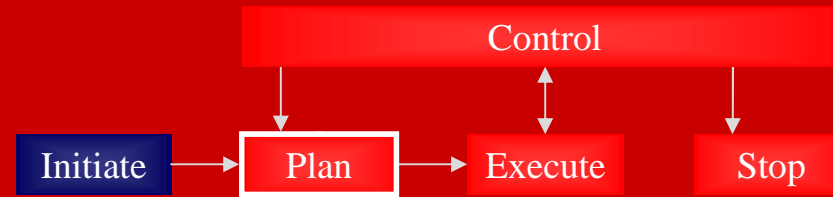
Cost Baseline – Parts Of

- A Budget for the project that is usually summarized by each WBS element.



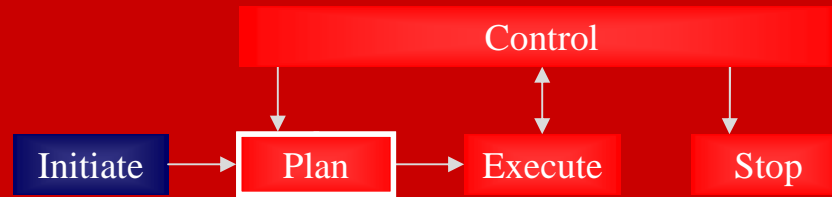
Activity: Create a Cost Baseline

- Project: *A Company Christmas Party.*
- Use the Template in Project Method
- Work in teams
- Time limit: 1/2 hour.



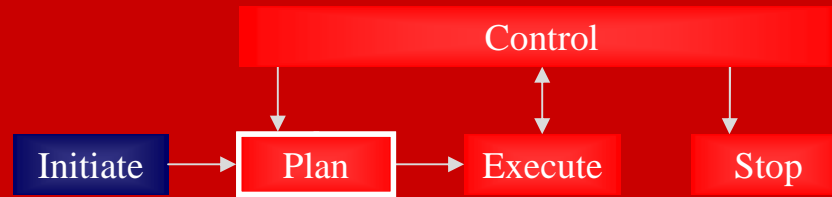
4. Plan Risk – Steps Of

1. Identify Risk Events
2. Quantify Risk
3. Determine Responses
4. Create Risk Management Plan



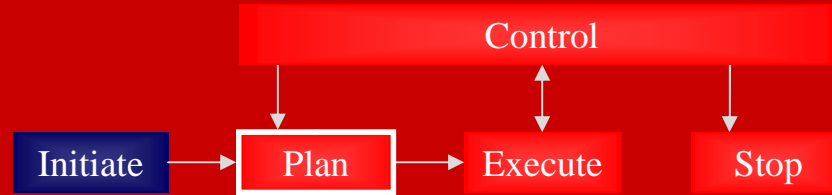
4. Plan Risk – Step 1

1. Identify Risk Events



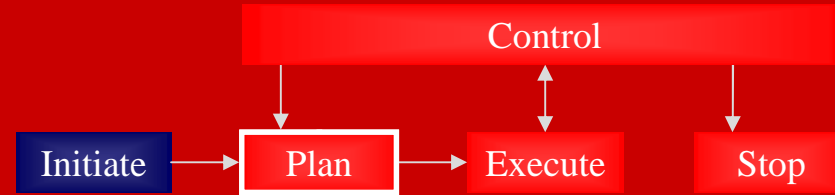
4. Plan Risk – Step 2

2. Quantify Risk



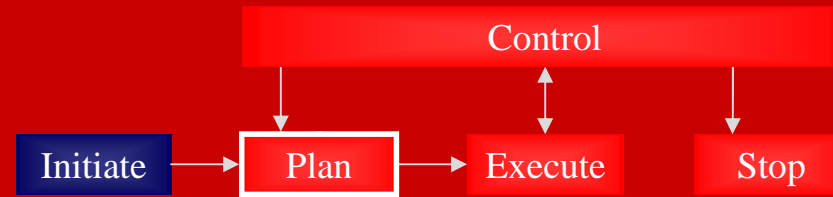
4. Plan Risk – Step 3

3. Determine Responses



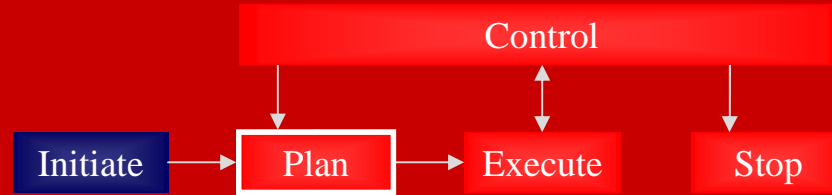
4. Plan Risk – Step 4

4. Create Risk Management Plan



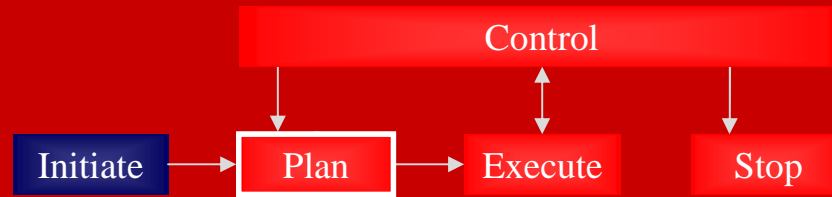
5. Plan Quality – Steps Of

1. Identify / create Quality Policy
2. Create Quality Checklists
3. Create Quality Management Plan



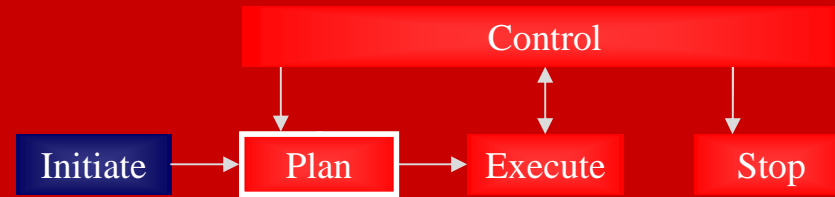
5. Plan Quality – Step 1

1. Identify / create Quality Policy



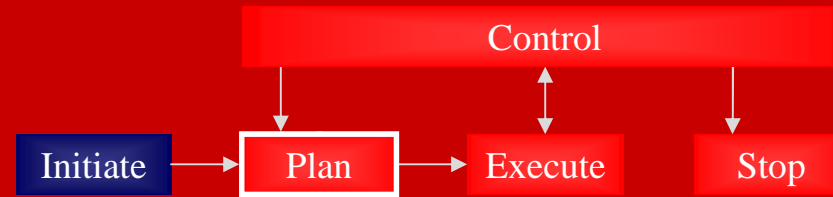
5. Plan Quality – Step 2

2. Create Quality Checklists



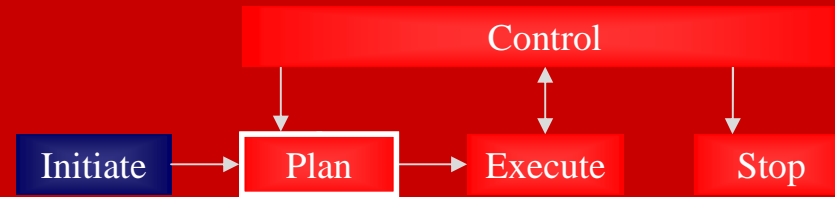
5. Plan Quality – Step 3

3. Create Quality Management Plan



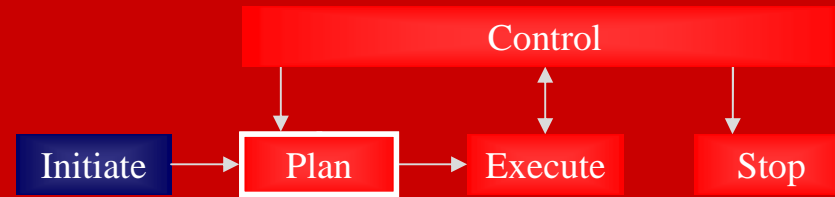
6. Plan HR – Steps Of

1. Assign Resources
2. Create Organization Chart
3. Create Team Directory



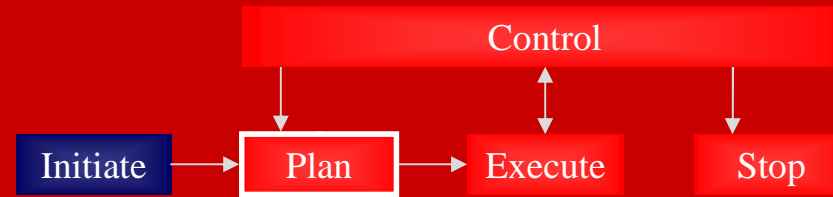
6. Plan HR – Step 1

1. Assign Resources



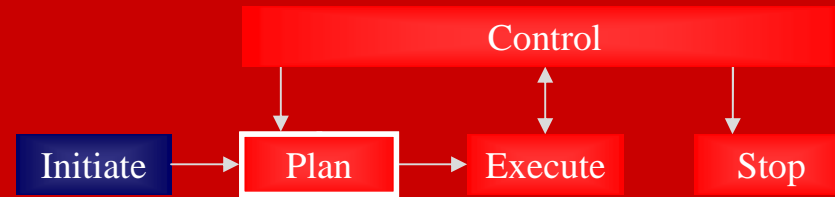
6. Plan HR – Step 2

2. Create Organization Chart



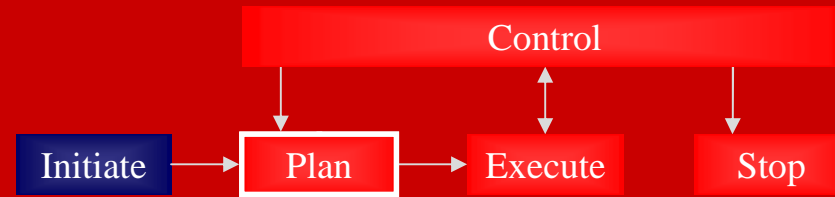
6. Plan HR – Step 3

3. Create Team Directory



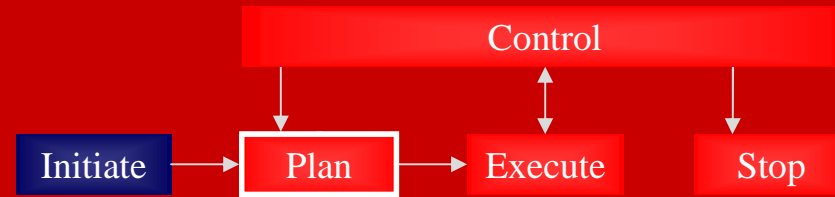
7. Plan Communication – Steps Of

1.



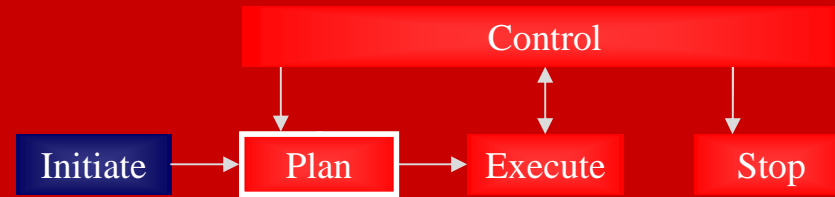
7. Plan Communication – Step 1

1.



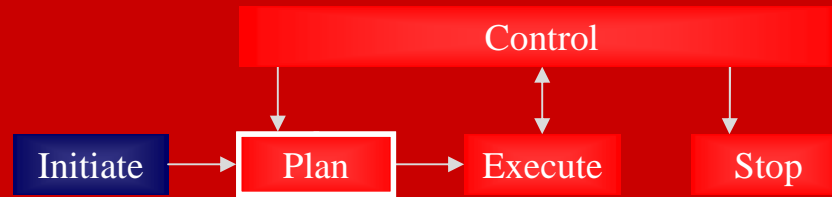
7. Plan Communication – Step 2

2.



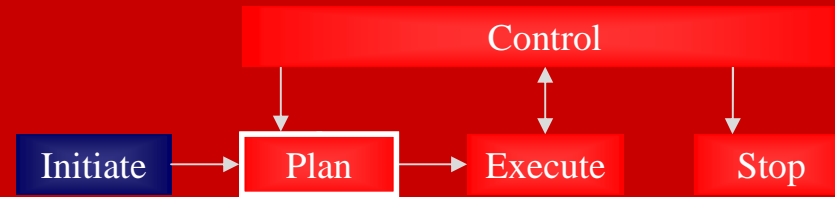
7. Plan Communication – Step 3

3.



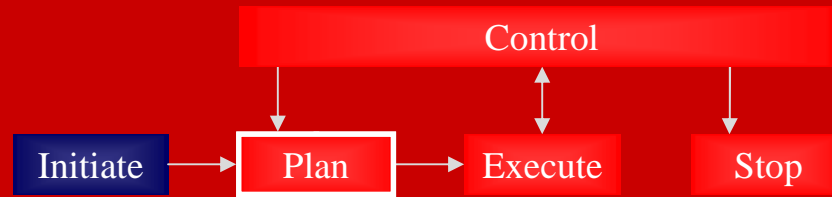
8. Plan Procurement – Steps Of

1. Create SOWs



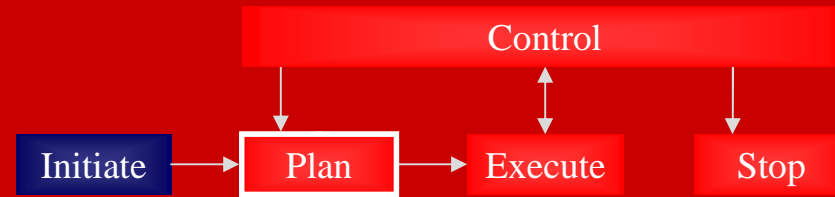
8. Plan Procurement – Step 1

1. Create SOWs



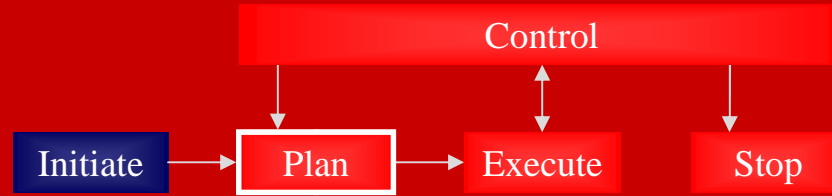
9. Plan Integration – Steps Of

1. Create Project Plan
2. Hold Launch Meeting



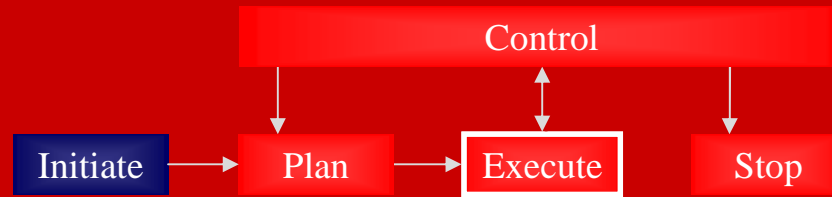
9. Plan Integration – Step 1

1. Create Project Plan



9. Plan Integration – Step 1

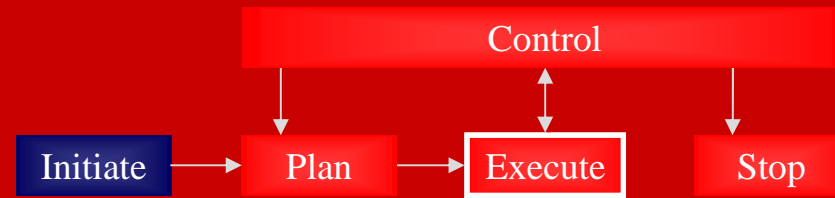
1. Hold Launch Meeting



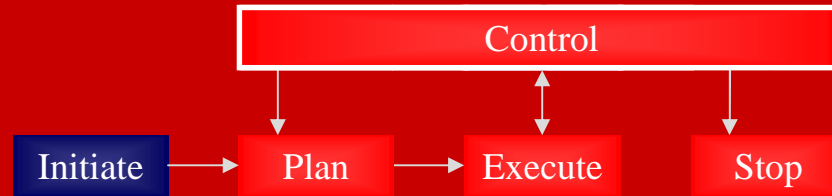
Execute

*“Coordinating people
and
other resources
to carry out
the plan”*

Project Management Institute



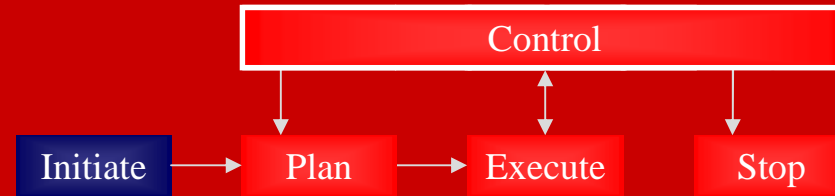
Execute – Steps Of



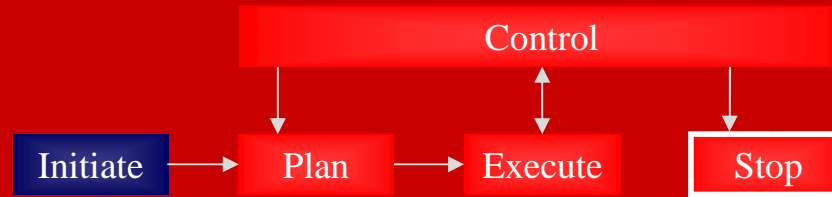
Control

*“Ensuring that
project objectives are met
by
monitoring and measuring progress
and
taking corrective action
when necessary”*

Project Management Institute



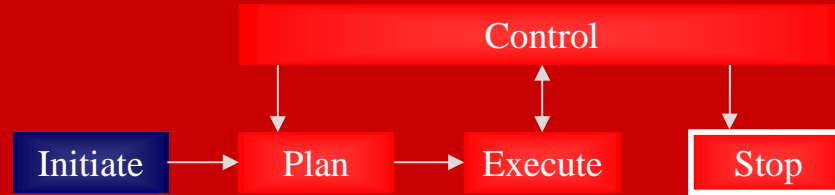
Control – Steps Of



Stop

*“Formally accepting
that the
project is brought to a required end
whether
successfully completed or not”*

The Ivory Owl Learning Company



Stop – Steps Of

