



INFO 6245

Planning &

Managing

Information

Systems

Development

Module 13

PMBOK 7th Ed (Part 1)

Agenda

- Project Management Principles
- Project Performance Domains
- Tailoring
- Models, Methods, & Artifacts
- Systems View
- Software Development Approaches
- Class Project Overview

PM Principles

PMI Code

The PMI Code of Ethics and Professional Conduct is based on four values:

Responsibility

Respect

Fairness

Honesty

The 12 PM Principles are aligned with these values

12 Principles of Project Management

Be a diligent,
respectful, and
caring steward

Create a
collaborative
project team
environment

Effectively engage
with stakeholders

Focus on value

Recognize,
evaluate, and
respond to system
interactions

Demonstrate
leadership
behaviors

Tailor based on
context

Build quality into
processes and
deliverables

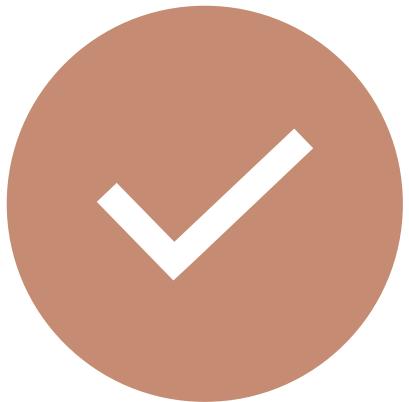
Navigate
complexity

Optimize risk
responses

Embrace
adaptability and
resiliency

Enable change to
achieve the
envisioned future
state

Sections of PMBOK 7th Ed



1. PROJECT
PERFORMANCE DOMAINS



2. TAILORING



3. MODELS, METHODS, &
ARTIFACTS

Project Performance Domains

1.1
STAKEHOLDER

1.2
TEAM

1.3
DEVELOPMENT
APPROACH &
LIFECYCLE

1.4
PLANNING

1.5
PROJECT WORK

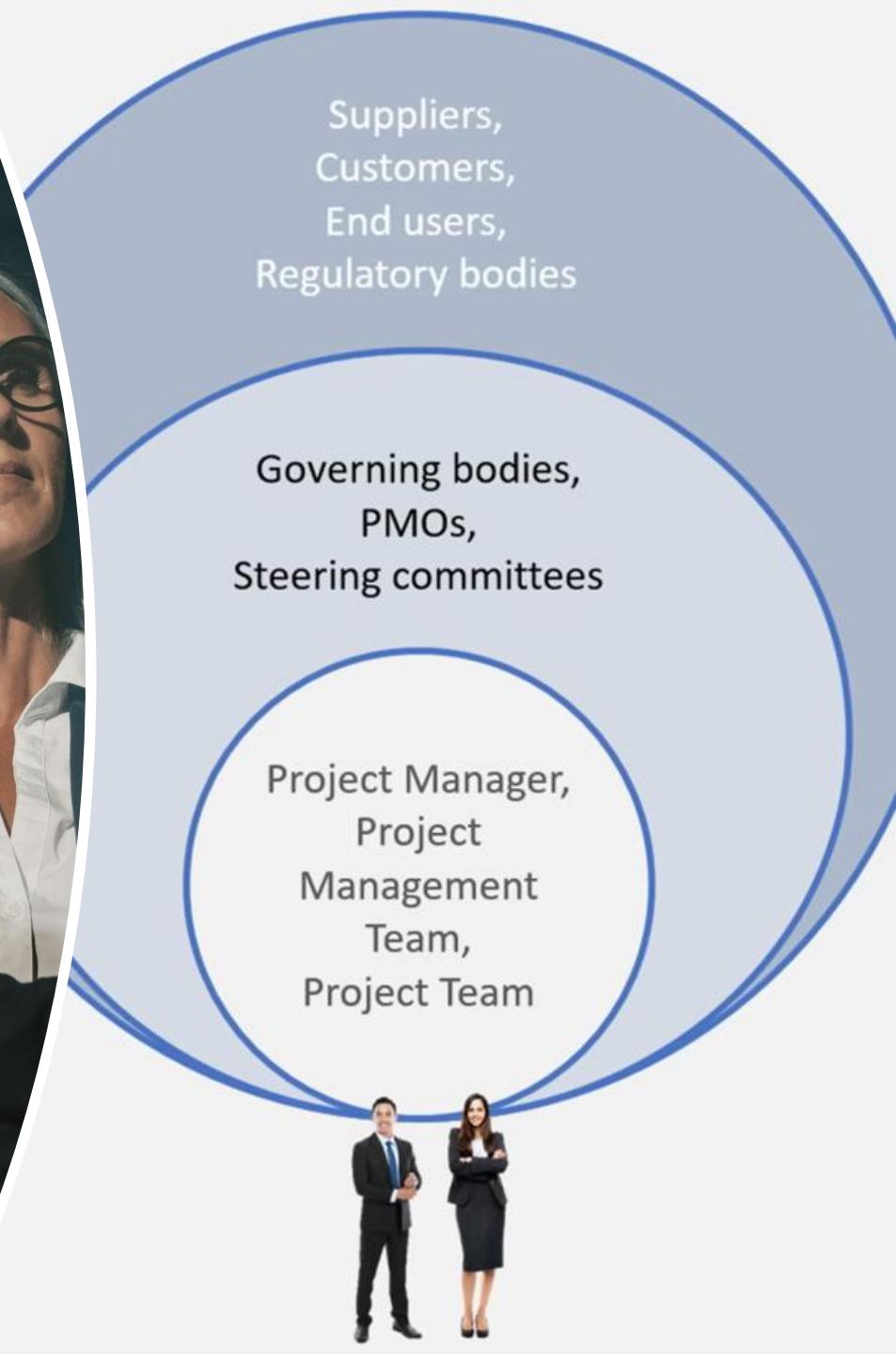
1.6
DELIVERY

1.7
MEASUREMENT

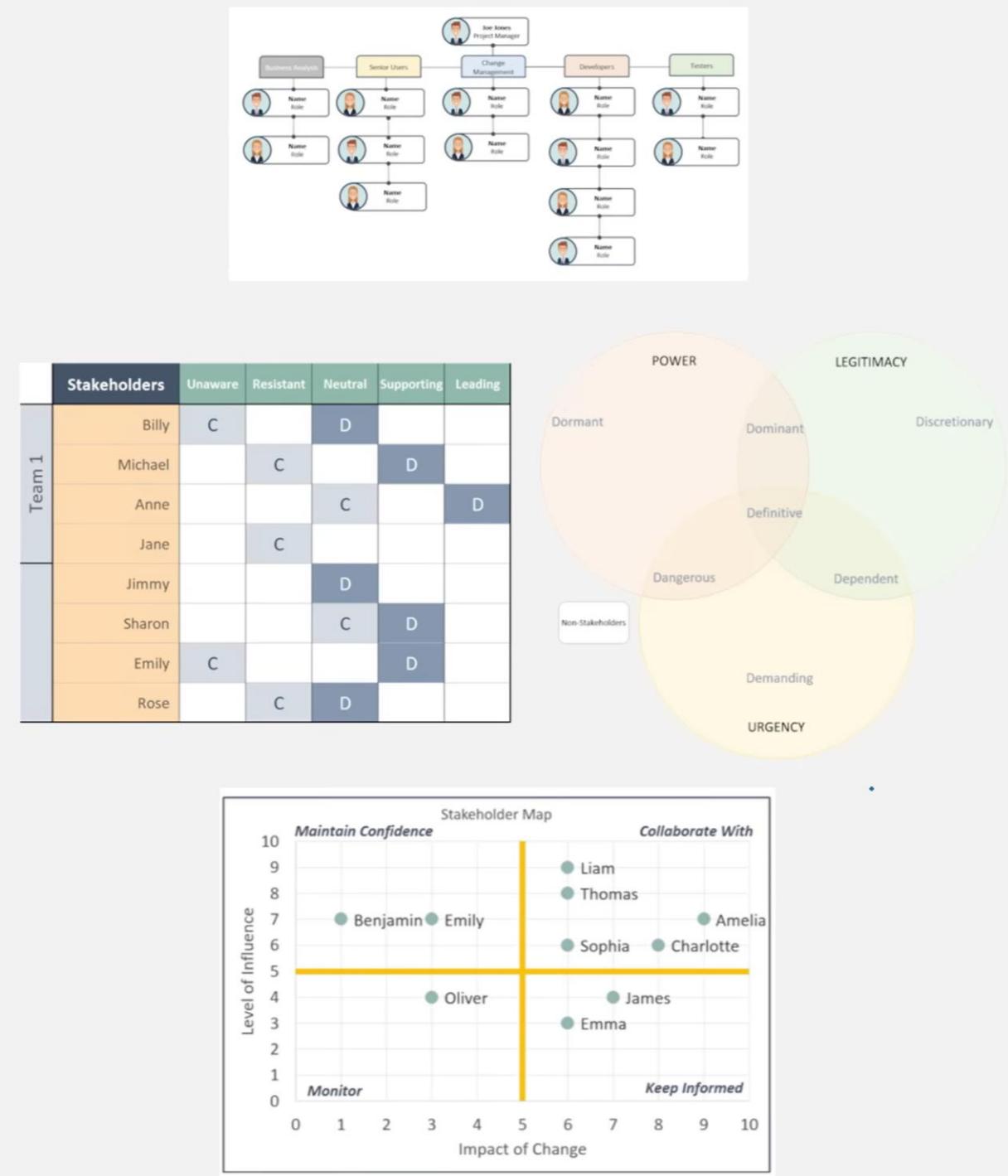
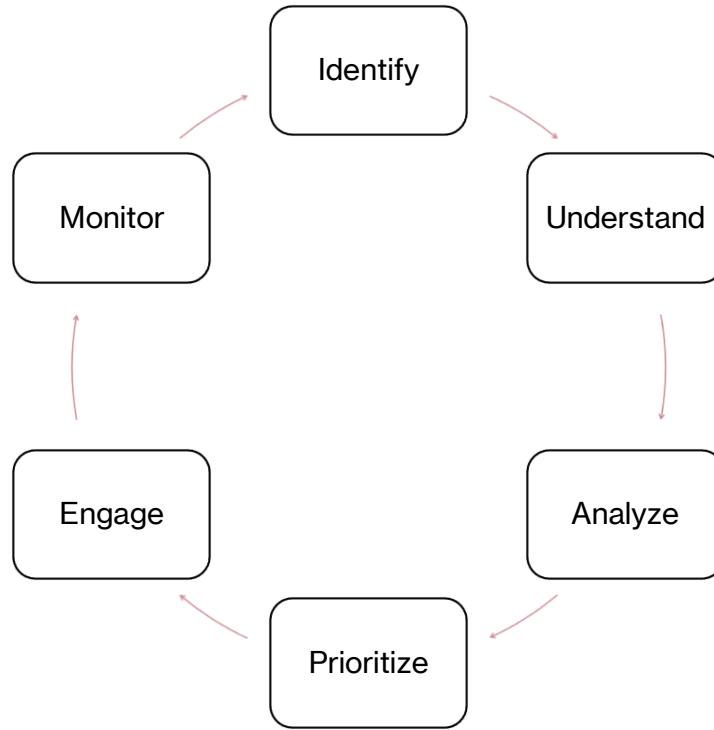
1.8
UNCERTAINTY

1.1 Stakeholder Performance

- Outcomes
 - Productive working relationship with stakeholders
 - Stakeholder agreement with project objectives
 - Stakeholder beneficiaries to be supportive and satisfied
- Key Terms
 - Stakeholder: Anyone affected (or perceived to be affected) by any part of your project

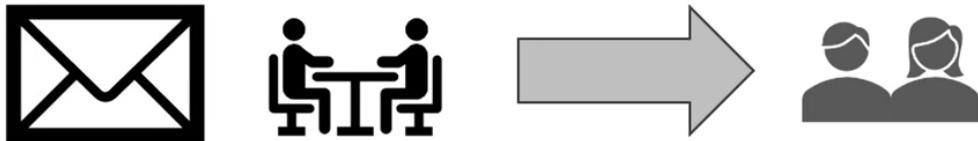


1.1 Stakeholder Engagement

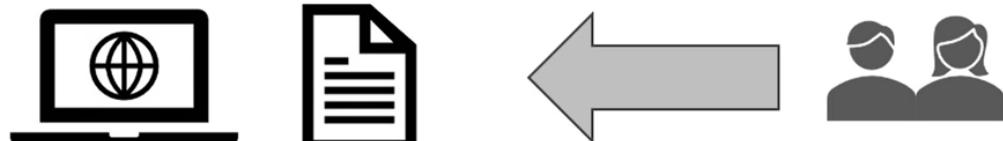


1.1 Stakeholder Engagement

- Push communication

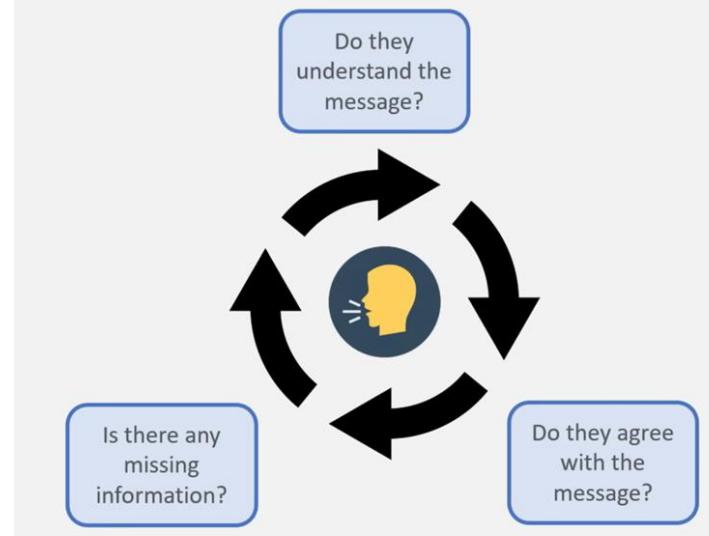


- Pull communication



 Used in meetings, phone calls, brainstorming, product demos

Use quick feedback loops



1.2 Team Performance

- Outcomes
 - Shared ownership
 - High performing team
 - Leadership displayed by all members
- Key Terms
 - Project Manager
 - Project Management Team
 - Project Team



1.2 Team Performance

Project Team Management & Leadership



Management:

- Meeting objectives
- Having effective processes
- Monitoring the work



Leadership:

- Influencing
- Motivating
- Listening
- Enabling people

1.2 Team Performance

Project Team Management & Leadership

Centralized Leadership:

- Accountability is on one person i.e. the Project Manager
- Use a Project Charter for approval and clarity of roles & scope

Distributed Leadership:

- Shared among the team
- Self organizing
- A facilitator focusing on growth
- Autonomy
- Servant leadership

1.2 Team Performance



Servant Leaders:

- Obstacle removal
- Diversion shield
- Development opportunities for the team

Team Development

- Vision & objectives
- Roles & responsibilities
- Team operations
- Guidance & growth

1.2 Project Team Culture

- Establish a respectful environment for open communications
 - Transparency
 - Integrity
 - Respect
 - Positive Discourse
 - Providing encouragement
 - Showing empathy
 - Active listening
 - Celebrating Success



1.2 High Performing Project Teams



Open communication

Shared understanding

Shared ownership

Trust

Collaboration

Adaptability

Resilience

Empowerment

Recognition

1.2 Tailoring Leadership Styles





1.2 Leadership Skills

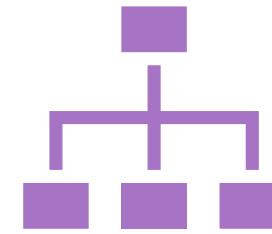
- Establishing a vision
- Critical Thinking
- Motivation
- Decision Making
- Conflict Management
- Interpersonal Skills

1.2 Establishing a Vision



Establishing a Vision

Developed collaboratively with stakeholders



The Project's Vision statement answers:

What is the project purpose?

What are the project benefits?

What defines success?

1.2 Critical thinking



Be aware of personal bias



Research & analyze data



Use deductive reasoning
(A generalized statement with a specific example)



Use inductive reasoning
(A specific example leading to a general statement)

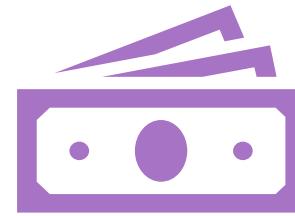


1.2 Motivation



Intrinsic Motivation

Belief in the work
Achievement
Self-Direction
Relatedness
Personal Growth



Extrinsic Motivation

Salary
Bonus
Perks
Status

1.2 Conflict Management

01

Keep communication respectful

02

Focus on the issue not the person

03

Focus on the present not the past

04

Search for alternatives together



1.2 Interpersonal Skills: Emotional Intelligence



SELF AWARENESS



SELF MANAGEMENT



SOCIAL AWARENESS



SOCIAL SKILLS

15 minutes exercise

Access the link below and take the EQ Quiz on your laptop

You can sign in as guest, there's no need to create an account

[Emotional Intelligence Quiz \(talenttransformation.com\)](https://talenttransformation.com/eq-quiz)

1.3 Development Approach & Lifecycle

Outcomes

- Development approach consistent with deliverables
- Project life cycle connecting the delivery of value with all stakeholders from beginning to end

Key Terms

- Deliverable (product/feature)
- Development approach (used to create product)
- Cadence (rhythm)
- Project phase (related activities that complete a deliverable)
- Project lifecycle (series of phases from start to end)

1.3 Development & Lifecycle Relationship

The type of deliverable determines how it can be developed.

There is different:

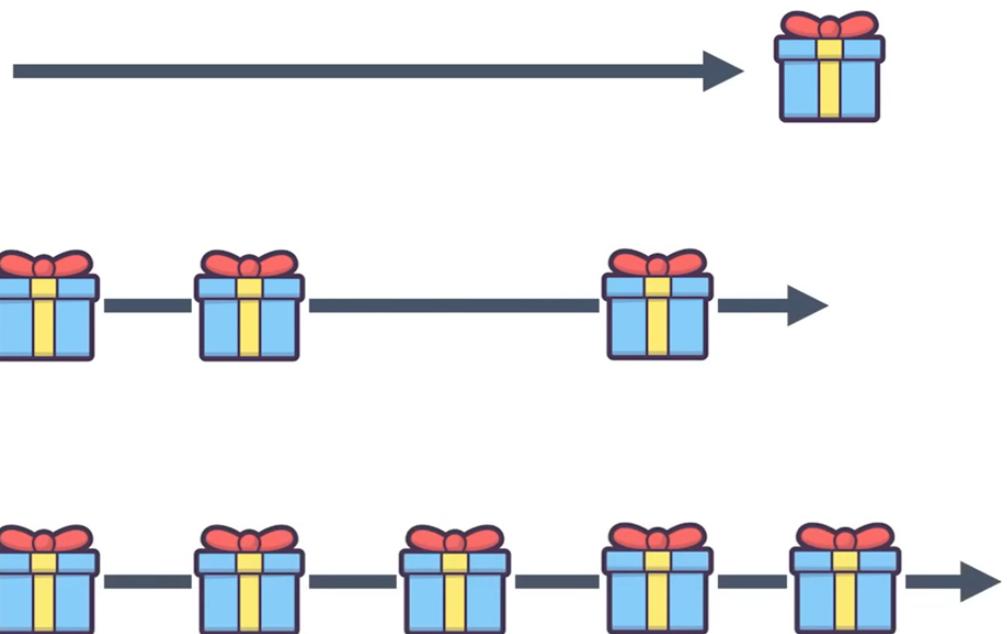
- Risk
- Certainty
- Complexity
- Need for change



1.3 Delivery Cadence

...Is the timing and frequency of project deliverables.

- Single delivery
- Multiple deliveries
- Periodic deliveries (multiple deliveries on a fixed schedule), similar to continuous delivery (DevOps)

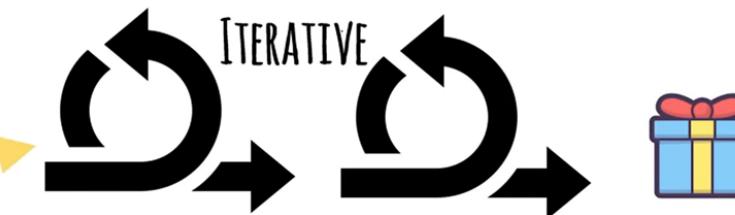


1.3 Development Approaches

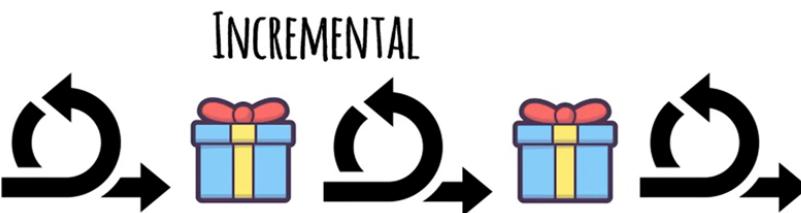
Predictive: (Waterfall) When work is easily defined, scope is collected at the start of the project, there's a large investment, or high risk. Use frequent reviews and change control.



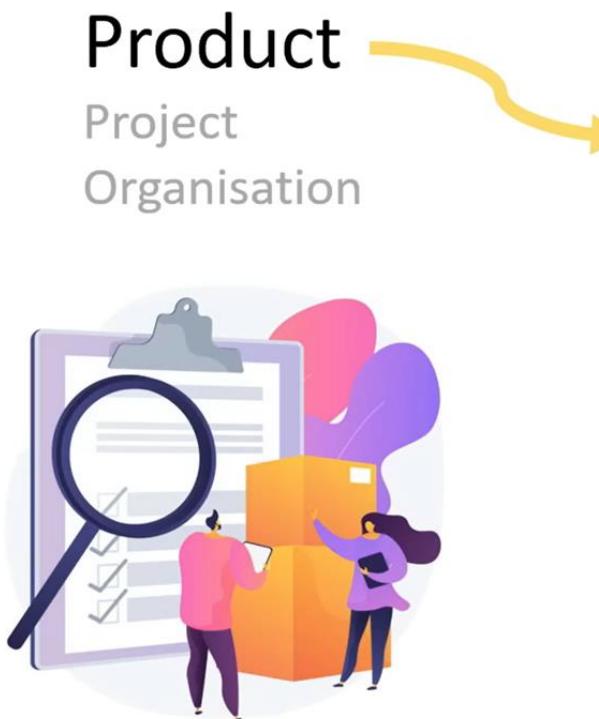
Hybrid: Any combination of adaptive (iterative and incremental) and predictive, useful when requirements are uncertain.



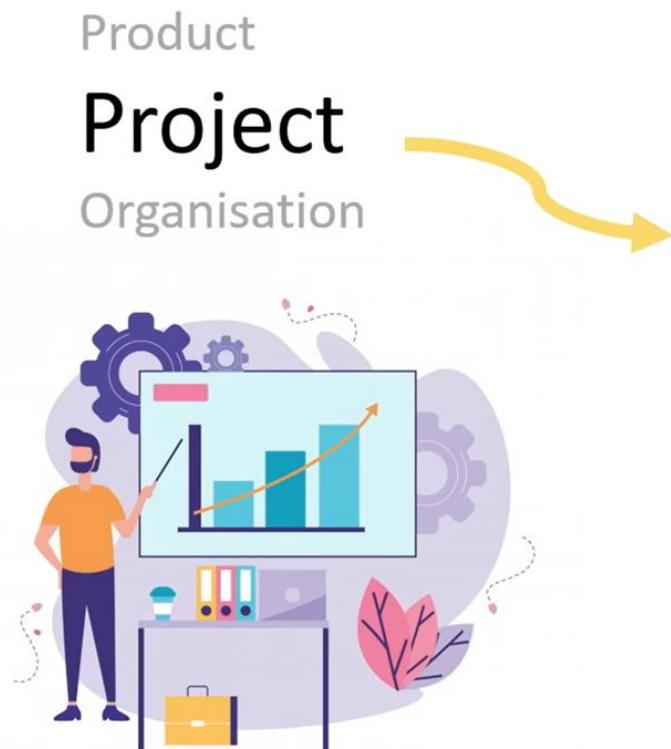
Adaptive: Considered Agile - combination of Incremental and Iterative, with shorter iterations



1.3 Selecting a Development Approach



1.3 Selecting a Development Approach



- Stakeholders
 - Is there a Product Owner available?
- Schedule constraints
- Funding availability

1.3 Selecting a Development Approach

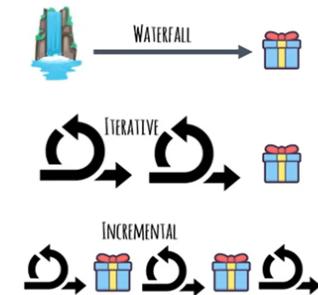
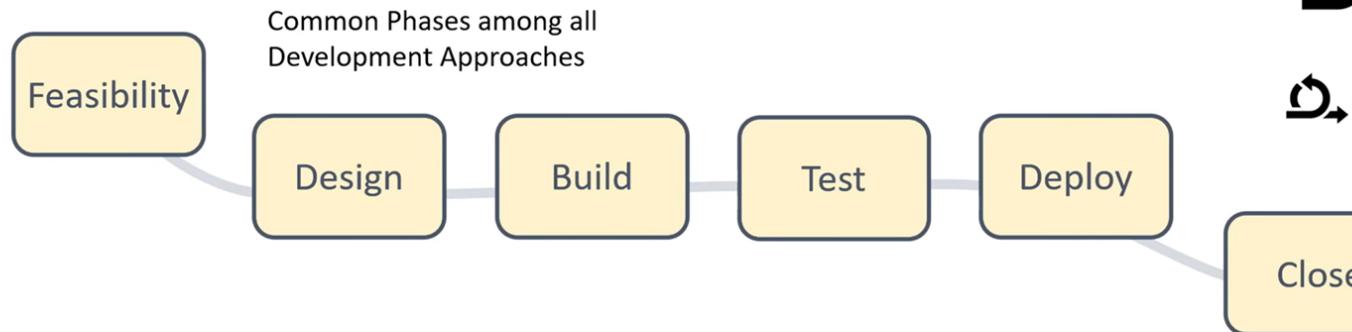
Product
Project

Organisation



- Org structure (flat or bureaucratic?)
- Culture
- Organisational capability
- Project team size and location

1.3 Lifecycle & Phase Definitions



Kanban / flow based has no phase:
It is a Pull approach



1.3 Aligning Development Lifecycle

Cadence



Rhythm and meetings
Single or multiple deliveries

Development approach



- Predictive
- Hybrid
- Adaptive
 - Iterative & Incremental



Lifecycle



- Design
- Build
- Test
- Deploy
- Close

1.4 Planning

- Outcomes
 - Project progresses in an organized, deliberate manner
 - Evolving information is used to produce the deliverables as needed
 - The process for adapting your plan is based on emerging needs or conditions
- Key Terms
 - Estimate
 - Accuracy (how correct is it – did it hit the target?)
 - Precision (exactness – is it all in the same place, repeatable?)
 - Schedule Crashing
 - Schedule fast tracking
 - Budget

1.4 Planning Variables



Development Style

Predictive (upfront planning)
Adaptive (rolling wave planning)



Project Deliverables

Construction (Planning needed)
Software (More flexible)



Organizational Requirements

Governance & Policies
Processes & Culture



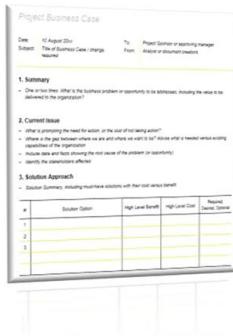
Market Conditions

Speed to Market
Launch & Release timeline
Legal & Regulatory restrictions

1.4 Planning Delivery

Delivery

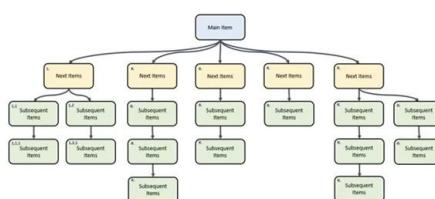
Planning begins with understanding the business case, stakeholder requirements and the product and project scope.



Product Scope
is
The features in the product

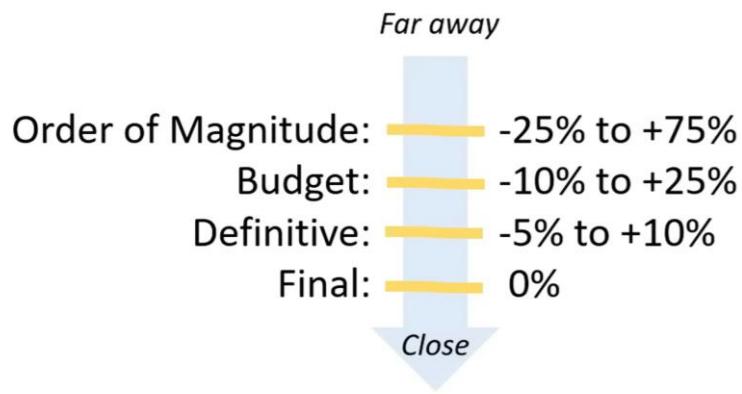


Project Scope
is
The work performed to deliver those features



Use a WBS to break down the work

1.4 Estimating



Precision
Is it **repeatable**?



- Adjust estimates for uncertainty
- Projects are uncertain - use simulation and build in reserves

Accuracy



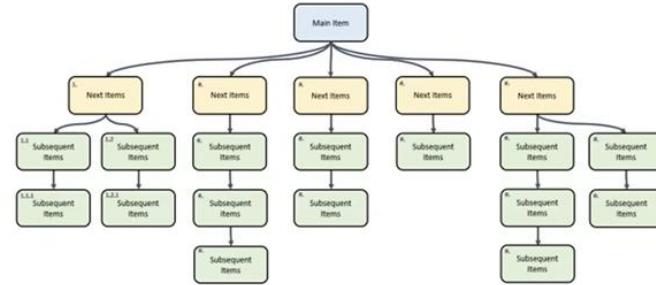
How **correct** is it - did it hit the target?

1.4 Estimating Terms

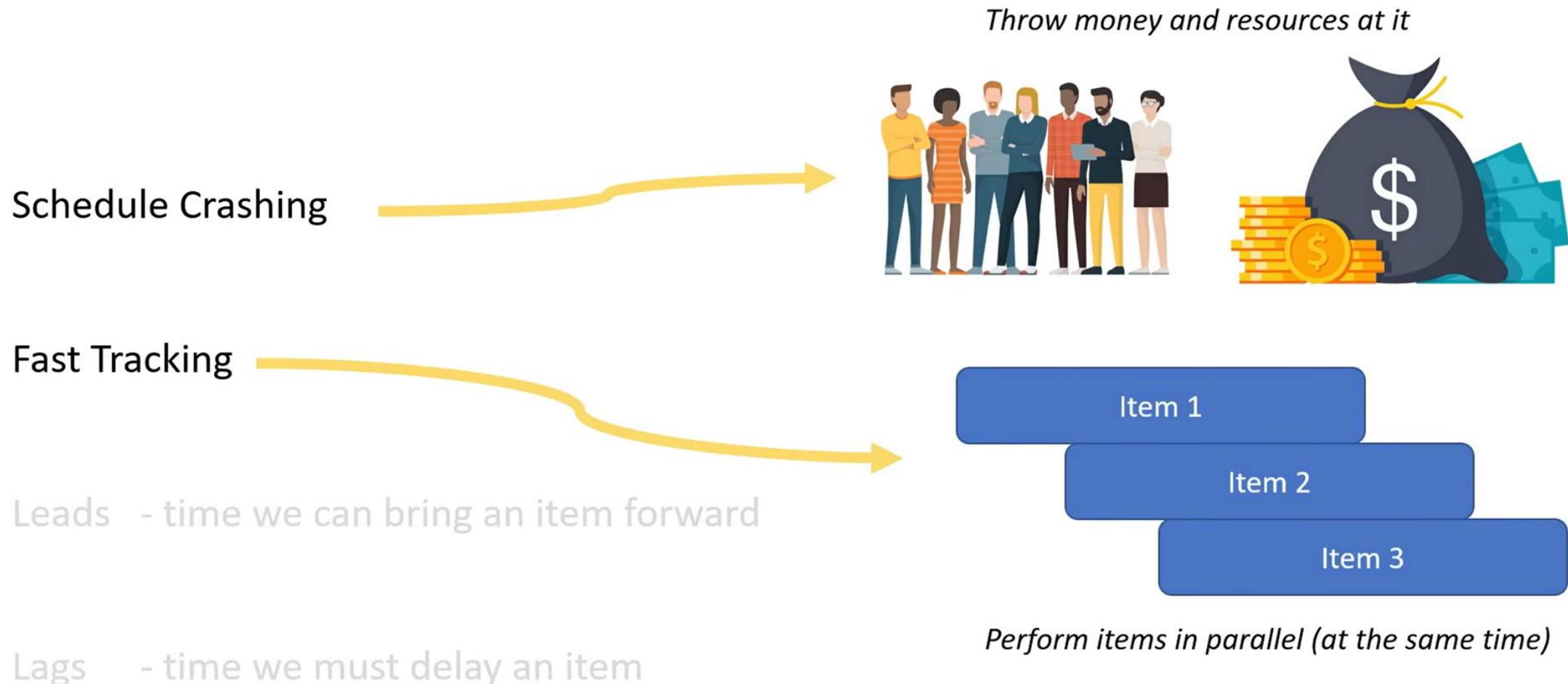
Confidence	—	increases with experience – get more experience
Deterministic estimating	—	is a number or point
Probabilistic estimating	—	is a range of options with probabilities for each
Absolute estimates	—	is a number
Relative estimates	—	is a comparison to other estimates
Flow based estimates	—	uses cycle time and throughput (time to complete) (number completed)

1.4 Managing Schedule

1. Decompose project scope into specific activities
2. Sequence related activities
3. Estimate effort, durations, people, & resources required to complete them
4. Allocate people based on availability
5. Adjust the sequence, estimates, & resources until schedule is finalized



1.4 Managing Schedule



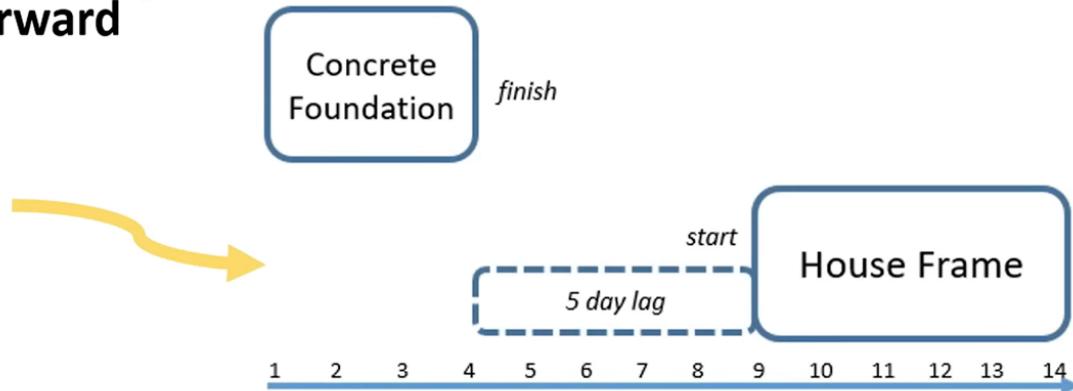
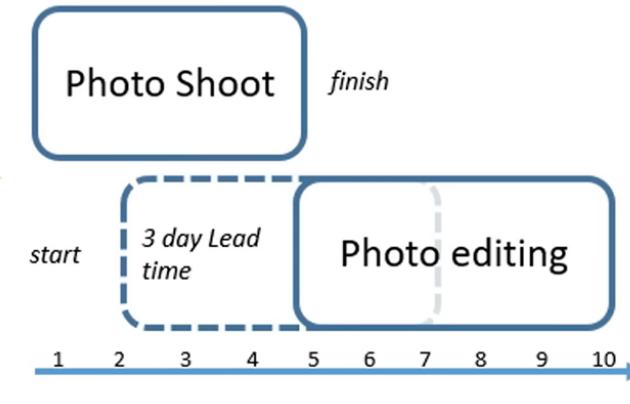
1.4 Managing Schedule

Schedule Crashing

Fast Tracking

Leads - time we can **bring an item forward**

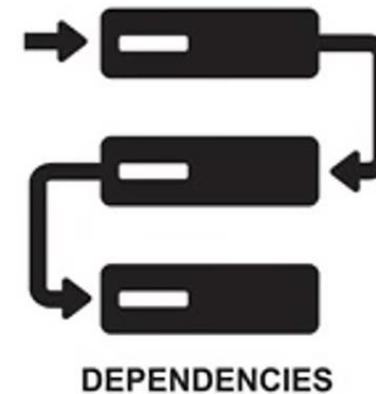
Lags - time we must **delay** an item



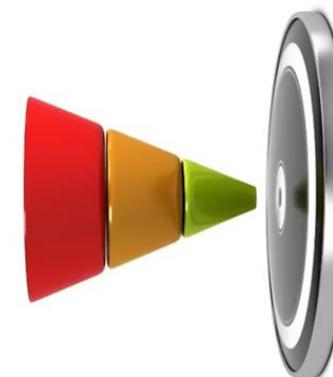
1.4 Managing Schedule

Dependencies include:

Mandatory	can't be modified
Discretionary	can be modified
External	impacted by non-project activities
Internal	impacted by project activities

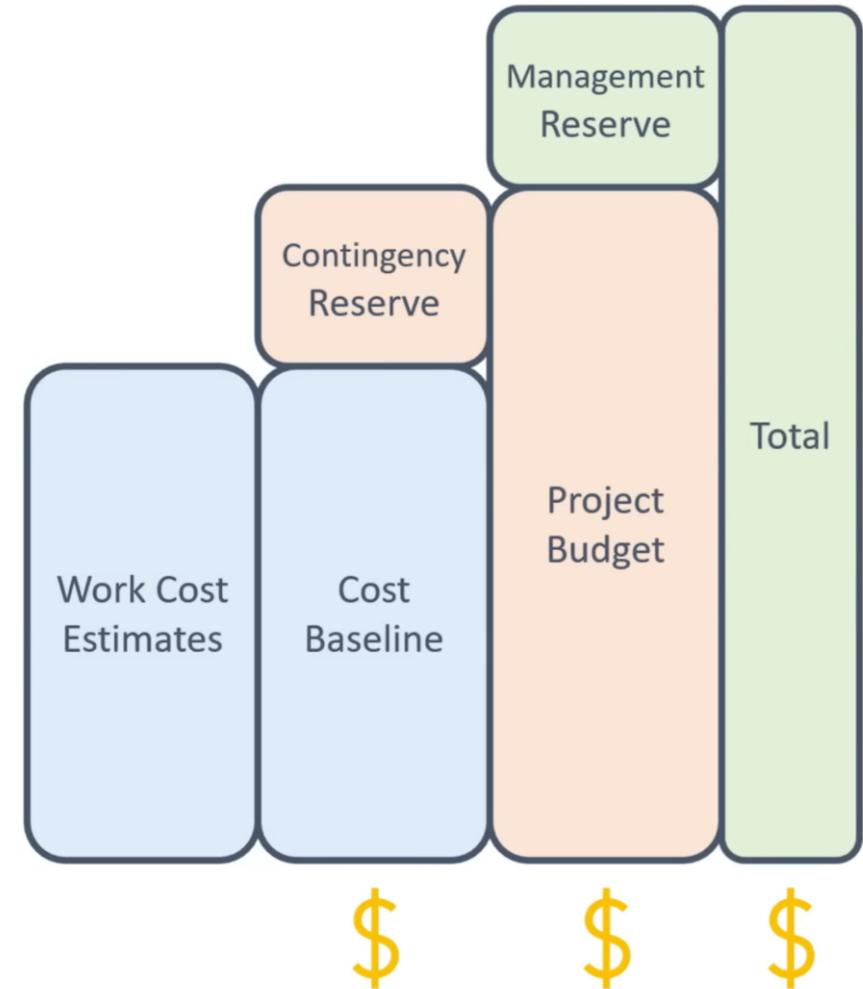


Rolling wave planning Far away: High level idea
 Near term: Detailed plan



1.4 Budget Planning

- Estimates are applied to the project work to create the Cost Baseline
- A Contingency Reserve for unknown risks is added to the Cost Baseline to create the Project Budget
- A Management Reserve for unexpected activities is added to the Project Budget



1.4 Physical Resources

Anything that is not a person.

Planning includes:

- Estimating for resources,
- Knowing the Supply chain & logistics
- Resource management



Consider the:

- Lead time for delivery
- Movement or transport, and;
- Storage of materials.



Think strategically about when to order materials so you are not waiting in your project.

1.4 Team Composition & Structure

We might have a choice between people:

Internal to our organisation

External to our organisation

Consider the:

Cost of the people

Expertise of the people

Location of the people (do we want co-located?)



1.4 Planning Communications

Good communication helps us engage with our stakeholders effectively.

Consider:

Who needs this information?

What information do they need?

Why do we need to share this information?

How do we provide this information?

When and how often do we share?

Who or Where do we get it from?



1.4 Procurement Planning

- Once the scope is known, conduct Make or Buy Analysis
- What can be made in-house vs. bought?
- What is the upfront cost and ongoing cost of making vs. buying?



1.4 Planning for Changes

Prepare a process for adapting your plan throughout the project.

This might include:

A Change control process

Reprioritising a backlog

Re-baselining project artefacts or outcomes



Change might occur due to:

Environment changes (organisation)

Customer requests

Gaining a deeper understanding of product scope

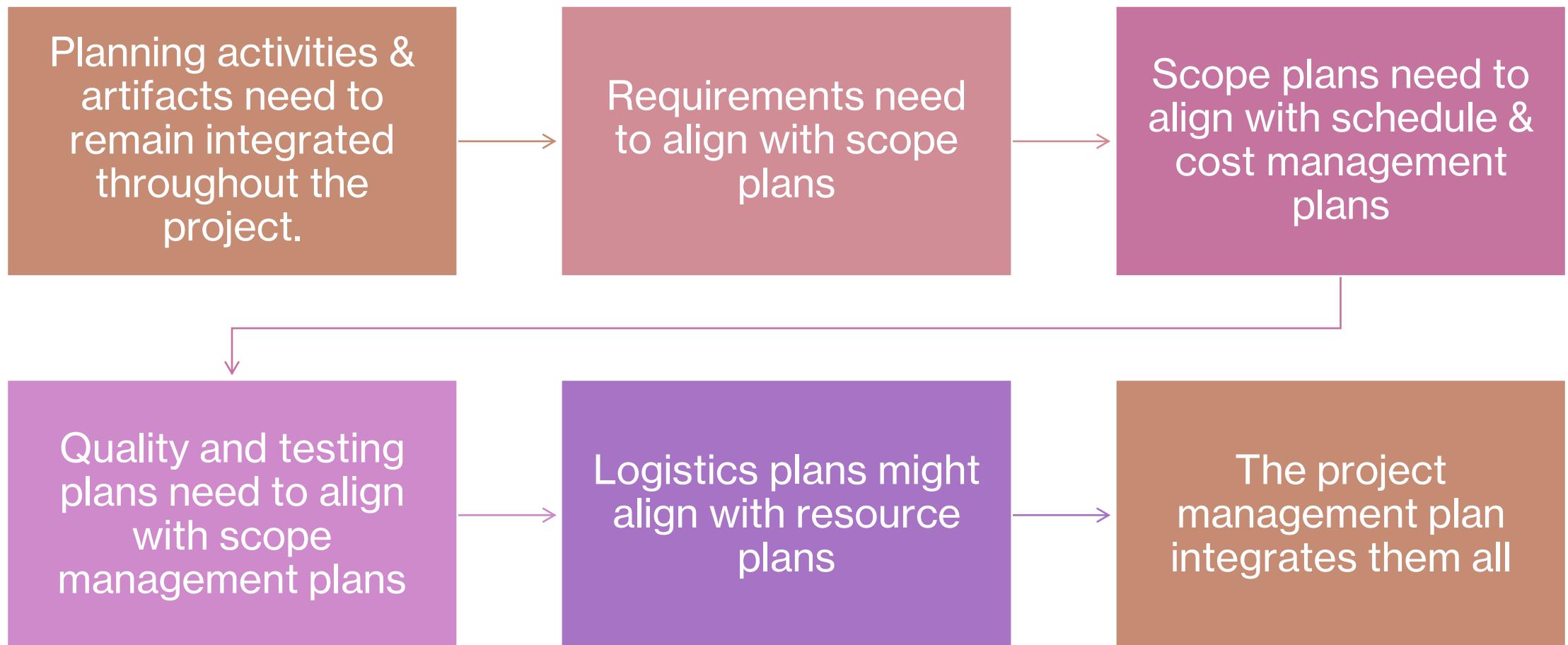


1.4 Metrics

Metrics is measuring the work



1.4 Alignment



A photograph showing a person from behind, wearing a blue hoodie, sitting at a desk and using a silver laptop. The laptop screen displays a video conference with eight participants. In the background, there is a blue pencil holder filled with colorful pencils and a large green plant.

1.5 Project Work

Outcomes:

- Efficient and effective project performance
- Appropriate project processes
- Appropriate communication with stakeholders
- Efficient management of physical resources and procurements
- Improved capability due to continuous learning and process improvement.

Key Terms

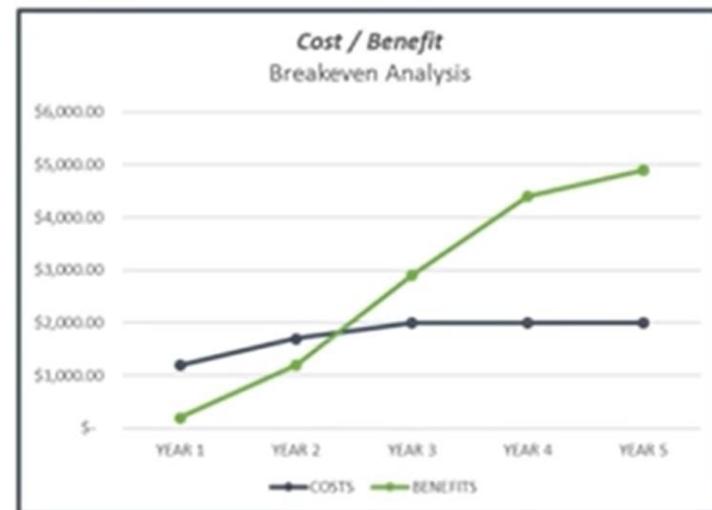
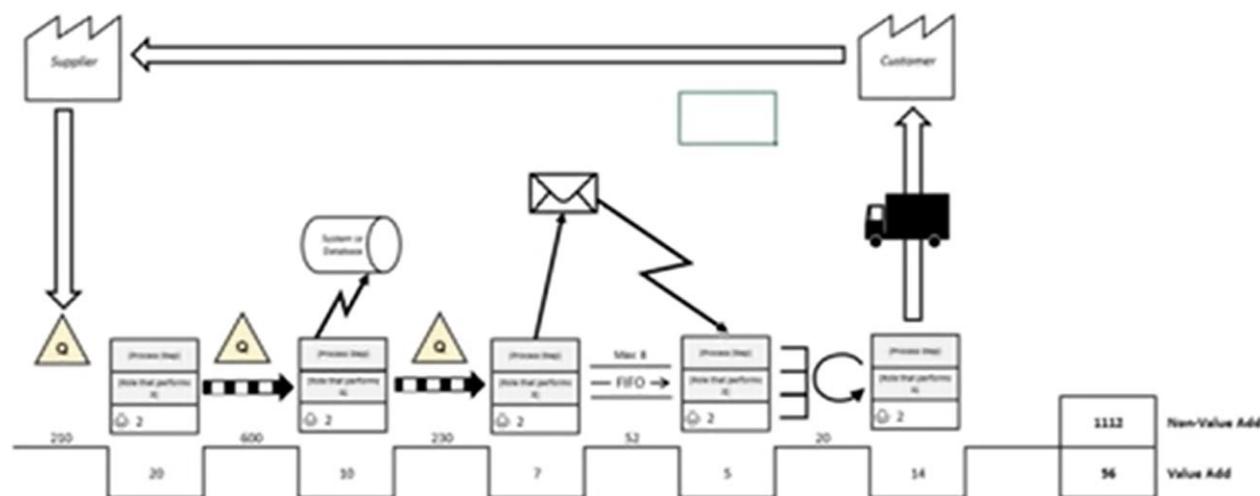
- Bid documents (proposals from sellers)
- Bidder conference
- Explicit knowledge (can be codified)
- Tacit knowledge (personal knowledge i.e. beliefs, experience)

1.5 Project Work

Project Processes

Periodically review the Project Process,
Make sure it still fits,
Tailor it to suit.

Use Lean Production methods
Retrospectives or lessons learned
Where is the next best funding spent?



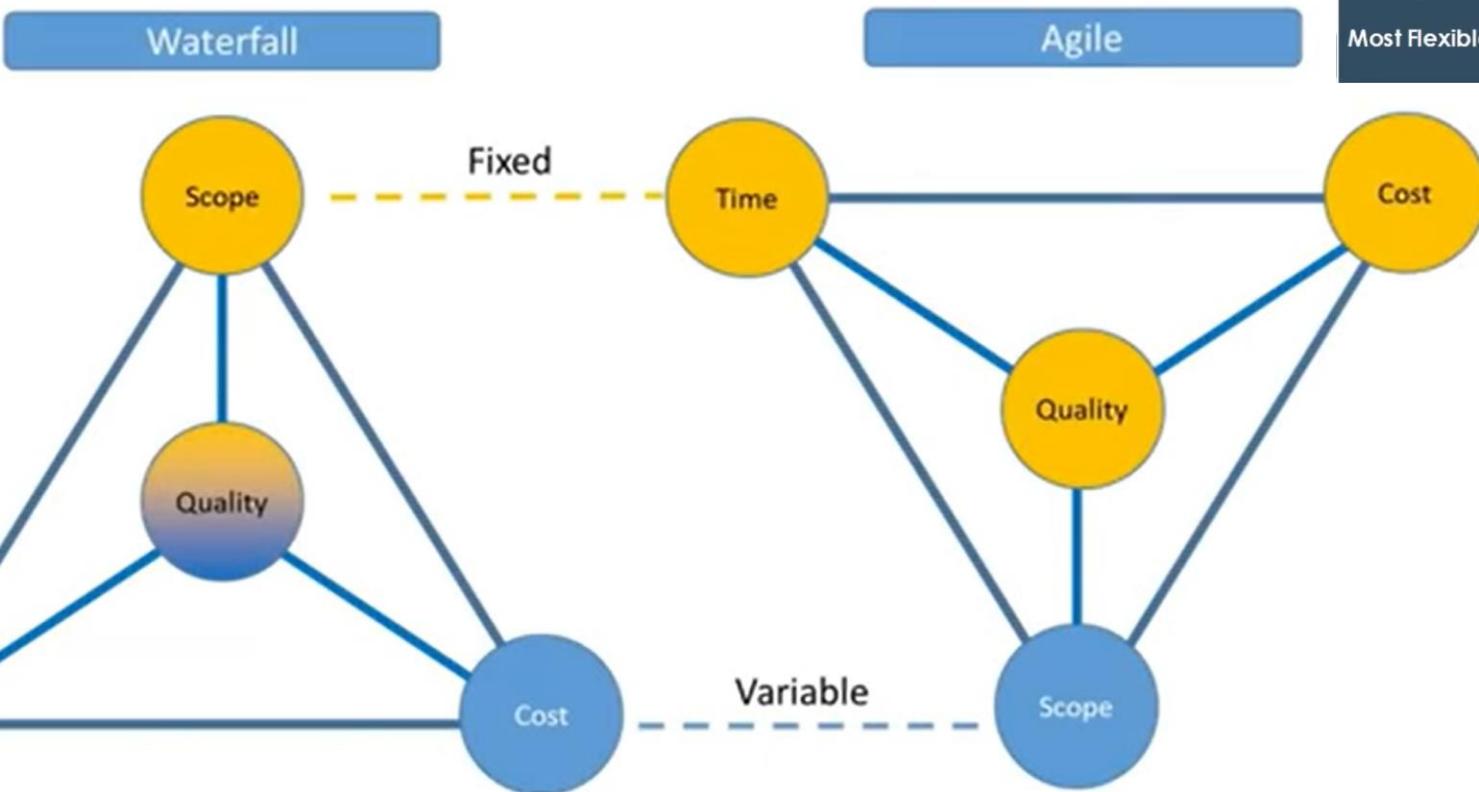
1.5 Project Work

Balancing competing constraints

Is ongoing.

It can be with Product Owner or within the project.

Trade-Off Sliders				
Place one "X" in each row				
Value	Cost	Time	Scope	Quality
X				
		X		
.	X			
		X		
			X	
				X



Constraints are:

Scope
Quality
Cost
Time

1.5 Project Work

Maintaining Project Team Focus

This is the Project Manager's responsibility, and includes:

- Short and long term projections of progress towards goals

- Balancing the workload amongst the team

- Assessing if team members are satisfied with their work



1.5 Project Work

Project communications and engagement



Communications include:

Formal, Informal, Verbal, Written.

They are:

Collected in meetings, conversations, or pulled from repositories.

Distributed as per the Communications Plan.



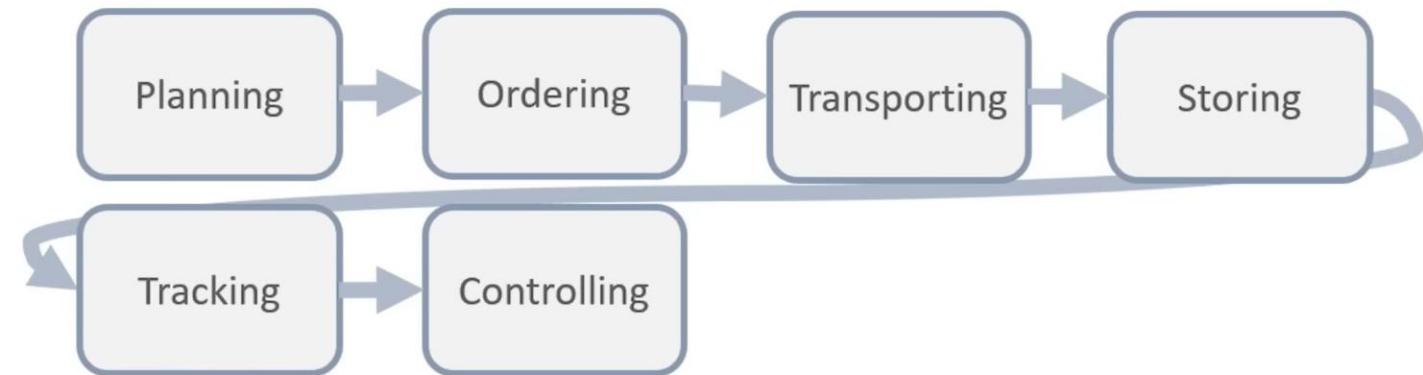
Abundant ad-hoc requests indicate insufficient communication.

1.5 Project Work

Managing physical resources

Resources include materials and supplies from third parties.

Resource process:



Large amounts require a logistics system, documented in company policies.

Eliminate wait time and reduce handling (the Lean Wastes)

- D efects or rework
- O ver-production
- W aiting
- N on effective use of time and talent
- T ransport
- I nventory
- M otion
- E xcessive processing

1.5 Project Work

Working with procurements

Procurements involve contracts, for things like material, equipment, labour or services.



Project managers won't usually write a contract themselves, but will work with contracting officers in the organisation, with rigorous policies in place.

A Project Manager might work with technical experts and the contracting officers to develop things like:

- Request for proposal (RFP)
- Statement of work (SOW)
- Terms and conditions etc.



1.5 Project Work

Working with procurements

The bidding process might include documents such as:

- Request for Information (to gather information from the market)
- Request for proposal (where scope is complex)
- Request for quote (where price is the main factor)

Choosing a vendor (source selection) is often based on:

- Price
- Delivery
- Experience

Once a vendor is selected, update the project plan with vendor details, dates, costs, quality requirements
The Vendor is now a project **Stakeholder**.



1.5 Project Work

Monitoring new work and changes

Scope may evolve and change over the life of a project.



For Adaptive Projects:

Project Manager works with the **Product Owner** to prioritise the scope in the Product Backlog.

Low priority items may not get done (in favour of high priority items).



For Predictive projects:

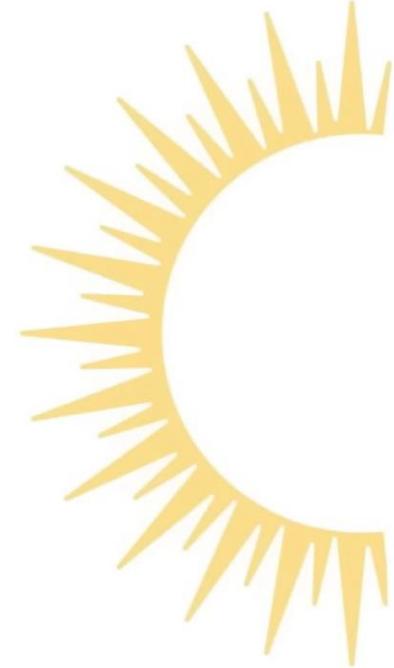
A Change Request is raised which goes through the change control board for approval, noting any impact to Cost, Quality, Scope or Schedule.

Once approved, the change is added to project documents and communicated to stakeholders.

1.5 Project Work

Learning throughout the project

Have a Knowledge Management process, to capture lessons learned through a retrospective or review, for other projects to use.



Explicit Knowledge

Is a process and can be taught.



Tacit knowledge

Includes beliefs and experience.

